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Docket No.: SON-1508  
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
Hiroki Endo et al.

Appeal No.: 2004-1528

Application No.: 09/272,331

Filed: March 19, 1999

For: METHOD OF PRODUCING COLOR FILTER  
FOR SOLID-STATE IMAGING DEVICE

Confirmation No.: 5505

Art Unit: 2612

Examiner: R. N. Tillery

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BOARD OF PATENT APPEALS  
AND INTERFERENCES

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REQUEST FOR REHEARING

MS Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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Technology Center 2600

Dear Sir:

Receipt is acknowledged of the Decision on Appeal (Decision) mailed on March 16, 2005 (Paper No. 22) from the Board of Patent Appeals and Interferences ("the Board"). Within the Decision, the Board has concluded that the Examiner made a *prima facie* case of obviousness and, thus, sustained the rejection of claims 1-17 under 35 U.S.C. §103.

Accordingly, this is a Request for Rehearing under 37 C.F.R. §41.52 in response to the Decision. This Request is limited to points and authorities believed to have been misapprehended or overlooked by the Board in rendering its Decision.

Within the Final Office Action of September 10, 2003, claims 1-2, 4, 6-7 and 9-16 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 4,876,167 to Snow et al. (Snow), claims 3, 8, and 17 were rejected under §103(a) as allegedly being unpatentable over Snow in view of U.S. Patent No. 5,140,396 to Needham et al. (Needham), and claim 5 was rejected under §103(a) as allegedly being unpatentable over Snow in view of U.S. Patent No. 5,805,966 to Yamada and in further view of EP 726503A2 to Ugai et al. (Ugai).

1. Claims 3, 8 and 17 have been argued as standing or falling separately

Within the Appeal Brief of October 6, 2003, claims 3, 8 and 17 have been argued as standing or falling separately with respect to the §103(a) rejection as being unpatentable over Snow in view of Needham. However, the Decision fails to provide separate arguments for each of claims 3, 8 and 17. Instead, the Board directs attention to claim 1, contending that this claim is illustrative of the claimed invention (Decision at page 1). As a result, claims 3, 8 and 17 were treated along with claim 1 instead of receiving individualized attention (Decision at pages 3-6).

But as noted hereinabove, the Final Office Action includes a rejection of claims 1-2, 4, 6-7 and 9-16 under 35 U.S.C. §102(b) as allegedly being anticipated by Snow, and includes a rejection of claims 3, 8, and 17 under §103(a) as allegedly being unpatentable over Snow in view of Needham. Separate grounds of rejection have been made between claim 1 and each of claims 3, 8 and 17, and each of the claims 3, 8, and 17 did not share a common ground of rejection with claim 1 as a result.

In this regard, the Federal Circuit has held that there is no *carte blanche* by the Board to ignore the distinctions between separate grounds of rejection and to select the broadest claim rejected on one ground. *In re McDaniel*, 293 F.3d 1379, 63 USPQ2d 1462 (Fed. Cir. 2002).

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

2. Claims 3, 8 and 17 feature of more than one filter layer comprising a dye containing photoresist

Claim 3 is dependent upon claim 1. Redrafted for convenience, claim 3 is drawn to a method of producing a color filter, comprising the steps of:

forming a filter layer of a second color in a substrate region in which a filter element of a first color is to be formed; and

overlapping a filter layer of a third color different from said second color on said filter layer of said second color and on said substrate;

wherein two overlapping filter layers form the filter element,

wherein said filter layer of a third color is made from *a dye containing photoresist*,  
and

wherein each of said filter layers of said second color is made from *a dye containing positive photoresist*.

Claim 8 is dependent upon claim 6. Redrafted for convenience, claim 6 is drawn to a color filter comprising:

a filter element of a first color, said first color filter element having a filter layer of a second color overlapping a portion of a filter layer of a third color,

wherein said first, second and third colors are different from each other,

wherein the second color layer is both in the same row as the third color layer and the second color layer is in a row above the third color layer,

wherein said filter layer of a third color is made from *a dye containing photoresist*,  
and

wherein each of said filter layers of said second color is made from *a dye containing photoresist*.

Claim 17 is dependent upon claim 12. Redrafted for convenience, claim 17 is drawn to a solid-state imaging device comprising:

a plurality of light receiving sensor portions for photo-electric conversion, provided in a surface layer portion of a substrate; and

a color filter provided correspondingly to said plurality of light receiving sensor portions;

wherein said color filter has a filter element of a first color having a filter layer of a second color overlapping a portion of a filter layer of a third color,

wherein said filter layer of a third color is made from a *dye containing photoresist*, and

wherein each of said filter layers of said second color is made from a *dye containing photoresist*.

Within claims 3, 8 and 17 of the present application, the filter layer of a third color is made from a dye containing photoresist, and each of the filter layers of the second color is made from a dye containing positive photoresist.

The Board has concluded that based upon the combined teachings of Snow and Needham, it would have been obvious to form each color with two overlapping layers of Needham's positive photoresists containing subtractive dyes, for enhanced light transmission and absorption as compared to a single layer of positive photoresists containing additive dyes (Decision at pages 5-6).

Regarding the teachings found within Snow, page 3 of the Reply Brief of February 17, 2004 highlights that the color filter arrays of Snow are comprised of interlaid sets of laterally displaced filters comprised of at least one mordanted anionic dye and a polymeric matrix which provides cationic mordanting sites (Snow at column 5, lines 4-8). And as additionally highlighted on page 3 of the Reply Brief, Snow further teaches that by providing a polymeric mordant which is directly crosslinked and thereby patterned by near UV and visible light the necessity of blending with it a photoresist polymer to form a filter element is ELIMINATED (Snow at column 3, line 66 to column 4, line 2). Thus, the teachings of Snow fail to show why the skilled artisan would have used a dye containing photoresist. Moreover, the Decision on Appeal has agreed that a dye containing photoresist is not found within Snow (Decision at page 4).

But to account for the claimed features admittedly absent from within Snow, the Board refers to figure 4B of Needham for the teaching of the dye containing photoresist (Decision at pages 4-5). Specifically, the Decision asserts that the rejection is under 35 U.S.C.

§103, with Needham being applied for its teaching of a dye containing photoresist (Decision at page 4). As a result, Needham must account for the teaching of more than one filter layer being a dye containing photoresist that is admittedly absent from within Snow.

Yet, the Decision fails to show that Needham discloses, teaches or suggests, more than one filter layer within Needham being made from a dye containing photoresist as found within claims 3, 8 and 17.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

3. Layer 22M within figure 4B of Needham is precluded from being a filter layer of a third color

Claims 3, 8 and 17 include the step of overlapping a filter layer of a third color different from said second color on said filter layer of said second color and on said substrate.

But as shown within figure 4B of Needham, layer 22M is precluded from being the claimed filter layer of a third color since layer 22M of Needham is not formed both on a filter layer of a second color and on the substrate 10.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

4. Needham fails to disclose, teach or suggest each of the filter layers 12Y, 14Y of the second color (yellow) as being made from a dye containing positive photoresist

Within claims 3, 8 and 17, each of the filter layers of the second color is made from *a dye containing positive photoresist*.

The term "positive photoresist" is used within Needham to refer to a composition which, in its dried-down state, when exposed to appropriate wavelength radiation is rendered more soluble in a developer composition than the unexposed areas, in contrast to a negative photoresist which is inherently soluble in a developer composition and which is cross-linked or

hardened by exposure to render it less soluble in the exposed areas (Needham at column 7, lines 43-51).

Needham arguably teaches overlapping a filter layer 22C of a third color (cyan) different from a second color (yellow) on a filter layer 12Y, 14Y of the second color (yellow) and on the substrate 10, wherein a composition comprising a cyan dye in a positive photoresist is applied over the whole surface of the solid state imager 10 to produce a photoresist/dye layer 22 (Needham at figure 4A, column 10, lines 60-64).

However, Needham fails to disclose, teach or suggest each of the filter layers 12Y, 14Y of the second color (yellow) as made from *a dye containing positive photoresist*.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

5. Needham fails to disclose, teach or suggest a polyester, a polyamide or a Novolak resin as being a photoresist

Needham arguably teaches an absorber layer 12 formed by coating the substrate 10 with an absorber material which contains a yellow dye (Needham at figure 1A, column 9, lines 29-31). Needham arguably teaches that the absorber material will comprise a polymer having a dye material therein (Needham at column 6, lines 10-11). Needham arguably teaches that the polymer may be any film-forming polymer having the appropriate reactive ion etch characteristics, for example a polyester, a polyamide or a Novolak resin (Needham at column 6, lines 21-24).

However, Needham fails to disclose, teach or suggest a polyester, a polyamide or a Novolak resin as being a photoresist.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

6. Needham fails to disclose, teach or suggest Futurrex PC1-1500D as being a photoresist

Needham refers to a material sold by Futurrex, of 44-50, Clinton Street, Newton, N.J. 07860, under the tradename Futurrex PC1-1500D (Needham at column 6, lines 28-32).

However, Needham fails to disclose, teach or suggest Futurrex PC1-1500D as being a photoresist.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

7. Needham fails to disclose, teach or suggest a Novolak resin within the absorber layer 12 as having been employed in conjunction with a sensitizer or photoactive compound

Needham arguably teaches that positive photoresist compositions are generally phenolic-formaldehyde *Novolak resins* employed in conjunction with a sensitizer or photoactive compound which is usually a substituted naphthoquinone diazide compound (Needham at column 7, lines 51-55).

However, Needham fails to disclose, teach or suggest a Novolak resin within the absorber layer 12 as having been employed in conjunction with a sensitizer or photoactive compound.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

8. Needham fails to disclose, teach or suggest that a Novolak resin without a sensitizer or photoactive compound would have been considered by the skilled artisan to be a photoresist

Needham fails to disclose, teach or suggest that a Novolak resin without a sensitizer or photoactive compound would have been considered by the skilled artisan to be a photoresist.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

9. Needham fails to shown that the absorber layer 12 is a photoresist

Nowhere within Needham has it been shown that the absorber layer 12 is, indeed, a photoresist.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

10. Needham fails to disclose, teach or suggest a photoresist that comprises a silicon rich species

Needham arguably teaches the presence of a barrier layer 14 on the absorber layer 12 (Needham at figure 1A), the barrier layer comprising a silicon rich species (Needham at column 7, lines 14-18).

However, Needham fails to disclose, teach or suggest a photoresist comprising a silicon rich species.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

11. Needham fails to disclose, teach or suggest a photoresist as being from silicon-based materials such as a polysilane, a polysiloxane, an organosilicon compound, a silica, a silicon nitride or a mixture thereof

Needham arguably teaches that for the barrier layer 14, suitable silicon-based materials include polysilanes, polysiloxanes, organosilicon compounds, silica, silicon nitride and mixtures thereof (Needham at column 7, lines 18-20).



However, Needham fails to disclose, teach or suggest a photoresist as being from silicon-based materials such as a polysilane, a polysiloxane, an organosilicon compound, a silica, a silicon nitride or a mixture thereof.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

12. Needham fails to shown that the barrier layer 14 is a photoresist

Nowhere within Needham has it been shown that the barrier layer 14 is, indeed, a photoresist.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

13. The combined teachings of Snow and Needham fail to disclose, teach or suggest dye containing positive photoresists for the second and third colors

The Decision on Appeal concludes that the combined teachings of Snow and Needham suggest dye containing positive photoresists for the second and third colors (Decision at page 5). But the Decision agrees that a dye containing photoresist is not found within Snow (Decision at page 4). Moreover, the Decision fails to show that Needham teaches either the absorber layer 12 or the barrier layer 14 as a photoresist.

As a result, the combined teachings of Snow and Needham fail to suggest dye containing positive photoresists for the second and third colors.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

14. Needham fails to show the presence of a dye containing photoresist for the second color (yellow) of Needham along with a dye containing photoresist for the third color of Needham

The Decision on Appeal contends that Needham discloses (column 1, lines 29-31) that color filters typically have red, green, and blue color or cyan, yellow, and magenta filter elements. In response, even if this contention is true, this contention fails to show the presence of a dye containing photoresist for the second color (yellow) of Needham along with a dye containing photoresist for the third color of Needham.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

15. Needham fails to disclose, teach or suggest the yellow layer 12Y, 14Y as being deposited by the process of U.S. Patent No. 4,808,501.

The Decision on Appeal contends that Needham discloses (column 21, lines 49-66) that U.S. Patent No. 4,808,501 teaches a method of forming a color filter using dye containing photoresists, wherein for each color, a layer is formed, exposed and developed (Decision at page 5). In response, it is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision since column 21, lines 49-66 of Needham, as relied upon within the Decision on Appeal, is not found within Needham. Instead, Needham concludes at column 18.

Moreover, regarding the process of U.S. Patent No. 4,808,501, Needham arguably teaches that either cyan, or cyan and magenta, dye(s) are deposited by the process of U.S. Patent No. 4,808,501 (Needham at column 9, lines 3-8).

Yet, Needham fails to disclose, teach or suggest the yellow layer 12Y, 14Y as being deposited by the process of U.S. Patent No. 4,808,501.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

16. The Decision has agreed that a dye containing photoresist is not found within Snow

The Decision on Appeal contends that Snow teaches (column 29, line 65 to column 30, line 2) that for red, green, and blue color filters, an arrangement of two superimposed layers each containing a different subtractive primary dye “offers advantages in light transmission and absorption as compared to employing a filter constructed of an additive primary dye.”

But even if true, the Decision has agreed that a dye containing photoresist is not found within Snow (Decision at page 4).

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

17. Needham also fails to disclose, teach or suggest either the absorber layer 12 or the barrier layer 14 as being made from a dye containing positive photoresist layer

Within claims 3, 8 and 17, each of said filter layers of said second color is made from *a dye containing positive photoresist*.

As shown hereinabove, Needham fails to disclose, teach or suggest either the absorber layer 12 or the barrier layer 14 as being made from a dye containing photoresist layer. Moreover, Needham also fails to disclose, teach or suggest either the absorber layer 12 or the barrier layer 14 as being made from a dye containing positive photoresist layer.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

18. The teachings of Snow and Needham, either individually or as a whole, are insufficient to show that the skilled artisan would have been motivated to look to Needham to modify Snow

As a rule, a *prima facie* obviousness of a claimed invention is established “only by showing some objective teaching in the prior art or that knowledge generally available to one of

ordinary skill in the art would lead that individual to combine the relevant teachings of the references.” *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).

The teachings of Snow and Needham must show that *the filter layer of a third color as claimed is made from a dye containing photoresist, and each of the filter layers of the second color as claimed is made from a dye containing positive photoresist* would have been obvious to the skilled artisan at the time of the claimed invention. But at least for the reasons provided hereinabove and for the following reasons, the combined teachings of Snow and Needham would not have motivated the skilled artisan to apply the teachings of Needham to Snow for the purpose of modifying Snow.

Regarding the teachings of Snow, the Decision has agreed that a dye containing photoresist is not found within Snow (Decision at page 4).

Also note that a reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994).

The Reply Brief on page 3 highlights within Snow that the color filter arrays of Snow are comprised of interlaid sets of laterally displaced filters comprised of at least one mordanted anionic dye and a polymeric matrix which provides cationic mordanting sites (Snow at column 5, lines 4-8), and that by providing a polymeric mordant which is directly crosslinked and thereby patterned by near UV and visible light, *the necessity of blending with it a photoresist polymer to form a filter element is eliminated* (Snow at column 3, line 66 to column 4, line 2).

It is impermissible to disregard portions of a prior art reference that teach away from an invention. *Akzo, N.V. v. United States International Trade Commission*, 808 F.2d 1471, 1481 1 USPQ2d 1241, 1246 (Fed. Cir. 1986).

Snow teaches away from the use of a photoresist polymer as a filter layer, as highlighted within the Reply Brief, and upon reading Snow, the skilled artisan would have been

discouraged from using a photoresist polymer as a filter layer, or would have been led in a direction divergent from the path that was taken by the Applicant within the present application.

Moreover, there is no suggestion to combine if a reference teaches away from its combination with another source. *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360, 52 USPQ2d 1294, 1298 (Fed. Cir. 1999).

Notwithstanding the teachings within Snow away from the use of a photoresist polymer as a filter layer, the Decision asserts that the rejection is under 35 U.S.C. §103, with Needham being applied for its teaching of a dye containing photoresist (Decision at page 4). The Decision attempts to justify the combination of Snow and Needham despite the absent of a clear motivation as to why the skilled artisan would applied the filter layer of Needham for the purpose of modifying the filter layer of Snow.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

*19. Claim 5*

Claim 5 stands or falls alone. Claim 5 is dependent upon claims 1 and 4. Redrafted for convenience, claim 5 is drawn to a method of producing a color filter, comprising the steps of:

forming a filter layer of a second color in a substrate region in which a filter element of a first color is to be formed; and

overlapping a filter layer of a third color different from said second color on said filter layer of said second color and on said substrate;

wherein two overlapping filter layers form the filter element,

wherein said filter layer of a third color is made from a dye containing photoresist,

wherein said color filter is composed of filter elements of a plurality of said first colors each of which is either of red, green and blue colors;

wherein said filter elements of said plurality of said first colors are produced by the steps of:

forming a yellow filter layer as a filter layer of said second or third color in a region in which said filter elements of red and green colors as said first colors are to be formed;

forming a cyan filter layer as a filter layer of said second or third color in a region in which said filter elements of green and blue colors as said first colors are to be formed; and

forming a magenta filter layer as a filter layer of said second or third colors in a region in which filter elements of red and blue colors as said first colors are to be formed.

wherein a principal pigment contained in a material for forming said yellow filter layer is an azo pigment;

a principal pigment contained in a material for forming said cyan filter layer is a copper phthalocyanine pigment; and

a principal pigment contained in a material for forming said magenta filter layer is a xanthene pigment.

The Decision on Appeal admits that Needham fails to disclose what specific dyes are to be used (Decision on page 7). Thus, the pigments of claim 5 are not found within Needham.

Instead, the Decision on Appeal asserts that Yamada and Ugai merely evidence that azo pigments were known for yellow dyes, that copper phthalocyanine pigments were known for cyan dyes, and that xanthene pigments were known for magenta dyes (Decision on page 7).

The Decision on Appeal asserts that the skilled artisan would have used any known dyes that were compatible with the photoresist (Decision on page 7).

However, the teachings of Yamada and Ugai, either individually or in combination, fail to show that the pigments cited therein would have been known to the skilled artisan as being compatible with the photoresist of Needham.

20. Nothing within either Yamada or Needham suggest a relationship between a photoresist and a yellow color toner

While Yamada arguably teaches that the color toner for yellow may be an insoluble azo pigment of acetoacetic acid anilide group (Yamada at column 9, lines 34-35), Yamada fails to disclose, teach or suggest that an insoluble azo pigment of acetoacetic acid anilide would be compatible with the photoresist of Needham. Instead, Yamada teaches a pigment for yellow color toner (Yamada at column 9, lines 34-35). In this regard, Yamada and Needham, either individually or as a whole, fail to show a pigment that would be suitable for a yellow color toner would also be suitable for a photoresist.

There is nothing within either Yamada or Needham that would suggest a relationship between a photoresist and a yellow color toner.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

21. There is nothing within either Ugai or Needham that would suggest a relationship between a photoresist and a yellow color toner.

While Ugai arguably teaches that the color toner for yellow may be condensed azo compounds (Ugai at page 9, line 58), Ugai fails to disclose, teach or suggest that condensed azo would be compatible with the photoresist of Needham. Instead, Ugai teaches a pigment for yellow color toner (Ugai at page 9, line 58). In this regard, Ugai and Needham, either individually or as a whole, fail to show a pigment that would be suitable for a yellow color toner would also be suitable for a photoresist.

There is nothing within either Ugai or Needham that would suggest a relationship between a photoresist and a yellow color toner.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

22. Nothing within either Yamada or Needham suggests a relationship between a photoresist and a cyan color toner.

While Yamada arguably teaches that the color toner for cyanogen may be a pigment of copper phthalocyanine group (Yamada at column 9, lines 42-43), Yamada fails to disclose, teach or suggest that a pigment of copper phthalocyanine group would be compatible with the photoresist of Needham. Instead, Yamada teaches a pigment for a cyanogen color toner (Yamada at column 9, lines 34-35). In this regard, Yamada and Needham, either individually or as a whole, fail to show a pigment that would be suitable for a cyanogen color toner would also be suitable for a photoresist.

There is nothing within either Yamada or Needham that would suggest a relationship between a photoresist and a cyanogen color toner.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

23. There is nothing within either Ugai or Needham that would suggest a relationship between a photoresist and a cyan color toner.

While Ugai arguably teaches that the color toner for cyan may be a copper phthalocyanine compound (Ugai at page 10, line 8), Ugai fails to disclose, teach or suggest that a copper phthalocyanine compound would be compatible with the photoresist of Needham. Instead, Ugai teaches a pigment for a cyan color toner (Ugai at page 10, line 8). In this regard, Ugai and Needham, either individually or as a whole, fail to show a pigment that would be suitable for a cyan color toner would also be suitable for a photoresist.



There is nothing within either Ugai or Needham that would suggest a relationship between a photoresist and a cyan color toner.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

24. Nothing within either Yamada or Needham suggest a relationship between a photoresist and a magenta color toner

While Yamada arguably teaches that the color toner for magenta may be a magenta dye of the xanthene group (Yamada at column 9, lines 37-38), Yamada fails to disclose, teach or suggest that a magenta dye of the xanthene group would be compatible with the photoresist of Needham. Instead, Yamada teaches a pigment for a magenta color toner (Yamada at column 9, lines 34-35). In this regard, Yamada and Needham, either individually or as a whole, fail to show a pigment that would be suitable for a magenta color toner would also be suitable for a photoresist.

There is nothing within either Yamada or Needham that would suggest a relationship between a photoresist and a color toner.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

25. Ugai fails to disclose, teach or suggest that a principal pigment contained in a material for forming magenta is an xanthene pigment.

While Ugai arguably teaches that the color toner for magenta may be condensed azo compounds, diketopyrrolopyrrole compounds, anthraquinone compounds, quinacridone compounds, basic dye lake compounds, naphthol compounds, benzimidazolone compounds, thioindigo compounds, and perylene compounds (Ugai at page 10, lines 4-7), Ugai fails to disclose, teach or suggest that a principal pigment contained in a material for forming magenta is an xanthene pigment.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

26. There is nothing within either Ugai or Needham that would suggest a relationship between a photoresist and a magenta color toner.

Ugai and Needham, either individually or as a whole, fail to show a pigment that would be suitable for a magenta color toner would also be suitable for a photoresist.

There is nothing within either Ugai or Needham that would suggest a relationship between a photoresist and a cyan color toner.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

27. Needham fails to teach that the pigments found within claim 5 are also found within U.S. Patent No. 4,808,501

The Decision on Appeal refers to U.S. Patent No. 4,808,501 cited within Needham (Decision at page 5). Regarding the process of U.S. Patent No. 4,808,501, Needham expressly teaches that either cyan, or cyan and magenta, dye(s) are deposited by the process of U.S. Patent No. 4,808,501.

Yet, Needham fails to teach that the pigments found within claim 5 are also found within U.S. Patent No. 4,808,501.

It is respectfully submitted that this point has been misapprehended or overlooked by the Board in rendering its Decision.

28. Conclusion

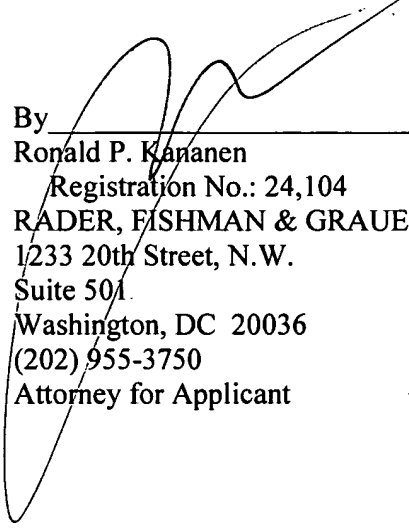
The previously stated points are believed to have been misapprehended or overlooked in the Decision and are grounds upon which rehearing is sought.

Accordingly, the Board is respectfully requested to reconsider its Decision in this matter.

If any fee is required or any overpayment made, the Commissioner is hereby authorized to charge the fee or credit the overpayment to Deposit Account # 18-0013.

Dated: May 16, 2005

Respectfully submitted,

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CASES

1. *In re McDaniel*, 293 F.3d 1379, 63 USPQ2d 1462 (Fed. Cir. 2002).
2. *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 52 USPQ2d 1294 (Fed. Cir. 1999).
3. *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994).
4. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).
5. *Akzo, N.V. v. United States International Trade Commission*, 808 F.2d 1471, 1 USPQ2d 1241 (Fed. Cir. 1986).

In re McDaniel, 63 USPQ2d 1462 (CA FC 2002)

**63 USPQ2D 1462**

**In re McDaniel**

**U.S. Court of Appeals Federal Circuit**

**No. 01-1307**

**Decided June 19, 2002**

### **Headnotes**

#### **PATENTS**

**[1]. Practice and procedure in Patent and Trademark Office — Board of Patent Appeals and Interferences — Rules and rules practice (§110.1105)**

**Patentability/Validity — Anticipation — Prior publication (§115.0705)**

On appeal from final rejection of application claims by patent examiner, Board of Patent

Appeals and Interferences selects one claim from group of claims rejected on same ground and decides appeal as to that ground of rejection based on representative claim alone, unless applicant states that claims do not stand or fall together and argues claims' separate patentability; in present case, board did not err in selecting one claim as representative of group rejected as anticipated under 35 U.S.C. §102, since applicants failed to meet requirements for separate consideration, in that they asserted that claims are properly of single group and that claims in group stand or fall together.

**[2] Practice and procedure in Patent and Trademark Office —Board of Patent Appeals and Interferences — Rules and rules practice (§110.1105)**

**Patentability/Validity — Obviousness — Relevant prior art — In general (§115.0903.01)**

Board of Patent Appeals and Interferences, in reviewing examiner's rejection of claims in patent application, erred in selecting single claim as representative of group of claims rejected under 35 U.S.C. §103, since examiner's Section 103 rejection of claims in group cited reference that was not cited in rejection of claim selected by board as representative, since claims in group therefore did not share common ground of rejection with representative claim, and since applicant has right to have each ground of rejection reviewed independently.

**[3] Patentability/Validity — Anticipation — Identity of elements (§115.0704)**

**Patentability/Validity — Anticipation — Prior publication (§115.0705)**

Substantial evidence supports decision by Board of Patent Appeals and Interferences upholding examiner's rejection of group of applicant's claims directed to organophosphorus detoxifying gene and recombinant organophosphorus acid anhydrase enzyme useful in detoxifying compounds found in pesticides and chemical warfare agents, since claim selected by board as representative of rejected group is very broadly drafted, and is directed to detoxification method rather than to organophosphorus detoxifying gene or use thereof, and since each of prior

art references cited by examiner teaches recombinant organophosphorus acid anhydrase enzyme and its use in detoxifying organophosphorus compounds.

**[4] Practice and procedure in Patent and Trademark Office —Prosecution — In general (§110.0901)**

**Patentability/Validity — In general (§115.01)**

Applicant's claims were properly rejected as unpatentable over cited prior art references, even though patent issued to another inventor, allegedly claiming same invention, was granted over same prior art, since prosecution of one patent application does not affect prosecution of unrelated application.

**Case History and Disposition**

Appeal from the U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences.

Patent application (no. 08/252,384) of C. Steven McDaniel, Frank M. Raushel, and James R. Wild. Applicants appeal from final rejection of claims 53-64. Affirmed in part, vacated in part, and remanded; Mayer, C.J., dissenting in part in separate opinion.

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**Attorneys:**

C. Steven McDaniel, of McDaniel & Associates, Austin, Texas, for appellants.

Kristin L. Yohannan, associate solicitor; John M. Whealan, solicitor; Steven Walsh, associate solicitor, Office of Solicitor, U.S. Patent and Trademark Office, Arlington, Va., for appellee.

**Judge:**

Before Mayer, chief judge, and Linn and Prost, circuit judges.

## Opinion Text

### Opinion By:

Linn, J.

Dr. C. Steven McDaniel, Dr. Frank M. Raushel, and Dr. James R. Wild (collectively “McDaniel”) appeal from the decision of the United States Patent and Trademark Office, Board of Patent Appeals and Interferences (“Board”) affirming the rejections of Claims 53-64 of McDaniel's Application No. 08/252,384 as unpatentable under 35 U.S.C. §§102(a) and 102(b) and finding it unnecessary to reach the rejections of the claims under 35 U.S.C. §103. *Ex parte McDaniel*, No. 1997-2138 (Bd. Pat. Appeals & Interferences Jan. 8, 2001). Because substantial evidence supports the §102 rejections of Claims 53-54 and 58-63, the Board did not err in affirming these rejections. However, the Board incorrectly interpreted 37 C.F.R. §1.192(c)(7) to permit it to select Claim 53 as representative of separately rejected Claims 55-57 and, thus, erred in failing to reach the §103 rejections of those claims. The Board also committed procedural error in affirming the rejection of Claim 64 under §102 rather than §103, but such error was harmless.

## BACKGROUND

McDaniel's '384 application relates to an organophosphorus detoxifying (“*opd*”) gene and a recombinant organophosphorus acid anhydrase (“OPA”) enzyme derived from that gene. This gene and enzyme are said to be useful in detoxifying organophosphorus compounds, which are commonly found in pesticides and in chemical warfare agents such as nerve gases. The application discloses the DNA sequence of the *opd* gene, the OPA enzyme derived from the *opd* gene, expression vectors comprising the *opd* gene, and transformed cells and transgenic organisms comprising the *opd* gene on an expression vector. The application also discloses methods for making and purifying the OPA, for using either the OPA itself or recombinant *opd* microorganisms to detoxify organophosphorus compounds, for detecting organophosphorus



compounds in the environment, and for protecting beneficial insects against organophosphorus-based insecticides. Claims 53, 57, and 64 of the '384 application are reproduced below.

53. A method for detoxifying an organophosphorus compound comprising exposing said compound to recombinant bacterial organophosphorus acid anhydrase.

57. The method of claim 53 wherein said organophosphorus compound is in air.

64. A method of preventing poisoning of a locus by an organophosphorus compound by applying recombinant organophosphorus acid anhydrase to said locus before said compound contacts said locus.

Claims 53-64 of the '384 application were finally rejected on August 24, 1994. The grounds of rejection relevant to the present appeal are as follows.

Claims 53-54 and 58-63 were rejected under 35 U.S.C. §102(a), or alternatively under 35 U.S.C. §103, over C. Steven McDaniel et al., *Cloning and Sequencing of a Plasmid-Borne Gene (opd) Encoding a Phosphotriesterase*, 170 J. Bacteriology 2306-11 (1988) ("McDaniel (BY)"), or over Linda L. Harper et al., *Dissimilar Plasmids Isolated from Pseudomonas diminuta MG and a Flavobacterium sp. (ATCC 27551) Contain Identical opd Genes*, 54 Applied and Env'tl. Microbiology 2586-89 (1988) ("Harper").

Claims 53, 58, and 60 were rejected under 35 U.S.C. §102(b) over J. R. Wild et al., *Cloning, Sequencing and Characterization of OPD Genes and Their Broad-Spectrum Organophosphate Hydrolases From Soil Bacteria*, in *Proceedings of the 1986 U.S. Army Chemical Research, Development and Engineering Center Scientific Conference on Chemical Defense Research* 629 (1986) ("Wild").

Claims 53-54 and 60 were rejected under 35 U.S.C. §102(b) over Claude Steven McDaniel, *Plasmid-Mediated Degradation of Organophosphate Pesticides* 111-64 (1985) (unpublished Ph.D. dissertation, Texas A&M University) (on file with the Texas A&M University Library) ("McDaniel (AZ)").

Claims 61-63 were rejected under 35 U.S.C. §102(b), or alternatively under 35 U.S.C. §103, over Wild or McDaniel (AZ).

Claims 53-54 and 59-64 were rejected under 35 U.S.C. §103 over a combination of

references, together with either McDaniel (BY) or Wild.

Claims 55-57 were rejected under 35 U.S.C. §103 over the same combination of references, together with McDaniel (BY) or Wild, and further in view of Grot et al., U.S. Patent No. 4,518,650 ("Grot").

McDaniel appealed these rejections to the Board. Based on McDaniel's statement that "[c]laims 53-64 are all properly of a single group," the Board grouped all the claims together on appeal, and selected claim 53 as representative of the entire group. *Ex parte McDaniel*, slip op. at 5. The Board rejected McDaniel's argument that the Declaration of Invention filed with the '384 application was sufficient under *In re Katz*, 687 F.2d 450, 215 USPQ 14 (CCPA 1982), to serve as a disclaimer of inventorship by Linda L. Harper and Dr. Charles E. Miller, who were listed as co-authors on the McDaniel (BY) and Harper references. Accordingly, the Board held that both McDaniel (BY) and Harper were proper §102(a) prior art. *Ex parte McDaniel*, slip op. at 13. The Board then affirmed the §102 rejections, applied to all of the claims. Having affirmed the §102 rejections, the Board then found it "unnecessary to separately consider the rejection of the claims under 35 U.S.C. §103." *Id.* at 17.

McDaniel timely appealed the Board's decision to this court, and we have jurisdiction under 28 U.S.C. §1295(a)(4)(A).

## DISCUSSION

### A. Standard of Review

Our standard of review of a decision of the Board is set forth in the Administrative Procedure Act, 5 U.S.C. §706. *Dickinson v. Zurko*, 527 U.S. 150, 154, 50 USPQ2d 1930, 1932(1999). Under that statutory provision, we will set aside legal actions of the Board that are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law," and set aside factual findings that are "unsupported by substantial evidence." 5 U.S.C. §706 (2000); *In re Gartside*, 203

F.3d 1305, 1316, 53 USPQ2d 1769, 1775(Fed. Cir. 2000).

An agency's interpretation of its own regulations is normally entitled to considerable deference, and that interpretation ordinarily will be accepted unless it is plainly erroneous or inconsistent with the regulation. *Bowles v. Seminole Rock & Sand Co.*, 325 U.S. 410, 414 (1945); *Data Gen. Corp. v. Johnson*, 78 F.3d 1556, 1561 (Fed. Cir. 1996).

Anticipation is a question of fact. *Rapoport v. Dement*, 254 F.3d 1053, 1057, 59 USPQ2d 1215, 1218 (Fed. Cir. 2001).

## B. Analysis

### I.

[1] On appeal to the Board from a final rejection of claims by the Examiner, the claims are grouped in accordance with 37 C.F.R. §1.192(c)(7):

For *each ground of rejection* which appellant contests and which applies to a group of two or more claims, the Board shall select a single claim from the group and shall decide the appeal as to that ground of rejection on the basis of that claim alone unless a statement is included that the claims of the group do not stand or fall together and ...appellant explains why the claims of the group are believed to be separately patentable. Merely pointing out differences in what the claims cover is not an argument as to why the claims are separately patentable. (Emphasis added.) The Manual of Patent Examining Procedure ("MPEP"), in explaining this regulation, notes that it requires the appellant to perform two affirmative acts in his or her brief in order to have the separate patentability of a plurality of claims *subject to the same rejection* considered. The appellant must (A) state that the claims do not stand or fall together and (B) present arguments why the claims subject to the same rejection are separately patentable. MPEP §1206 (8th ed. Aug. 2001) (emphasis added).

The rule operates to relieve the Board from having to review—and an applicant from having to argue—the myriad of distinctions that might exist among claims, where those distinctions are,

in and of themselves, of no patentable consequence to a contested rejection. For example, if two commonly rejected but patentably distinct claims are considered by an applicant to be patentably distinguishable over the cited art for reasons applicable to both claims, there is no reason why the Board, or an applicant for that matter, should have to

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be concerned with the distinctions between the claims themselves in the rejected group. If the applicant's commonly applicable reasons for patentability have merit, the rejection of both claims will be overcome, quite apart from any patentable distinctions that exist between the claims. The rule acts as the default that permits the Board to designate one claim to serve as representative of others in a commonly rejected group and to focus its attention on only those matters that are dispositive of the appeal, unless applicant overcomes the default to assure separate review of individual claims by meeting the two conditions specified in the rule.

Thus, to assure separate review by the Board of individual claims within each group of claims subject to a common ground of rejection, an appellant's brief to the Board must contain a clear statement for each rejection: (a) asserting that the patentability of claims within the group of claims subject to this rejection do not stand or fall together, and (b) identifying which individual claim or claims within the group are separately patentable and the reasons why the examiner's rejection should not be sustained. *See* 37 C.F.R. §1.192(c)(7) (2001). If the brief fails to meet either requirement, the Board is free to select a single claim from each group of claims subject to a common ground of rejection as representative of all claims in that group and to decide the appeal of that rejection based solely on the selected representative claim.

## II.

Here, McDaniel failed to meet both requirements of 37 C.F.R. §1.192(c)(7) in his brief to the Board. Rather than asserting that the claims on appeal “do not stand or fall together,” he affirmatively stated that “claims 53-64 are all properly of a single group.” Moreover, he argued patentability generally, without setting forth separate reasons for patentability with respect to any one or more claims apart from the others. The Board interpreted McDaniel's statement and his

general argument to mean that, as to the questions of patentability raised by the appeal, the claims “stand and fall together.” *Ex parte McDaniel*, slip op. at 5. At oral argument before this court, Dr. McDaniel was asked specifically about this issue, and he affirmed that his position both before this court and before the Board was that all the claims stand or fall based on claim 53. By failing to argue for separate patentability of his claims in his brief to the Board, and by stating in that brief that “Claims 53-64 are all properly of a single group,” McDaniel has waived the right to insist that the Board separately review the patentability of individual claims within each group of rejected claims. His reassertion at oral argument before this court of his position that all of the claims stand or fall together with claim 53 specifically precludes any challenge by McDaniel to the Board's selection of claim 53 as being representative of the claims grouped with claim 53 in the Examiner's rejections.

The Board selected Claim 53 as representative of claims 53-64, and noted that “the determination reached in this decision as to the patentability of Claim 53 is considered dispositive of the question of patentability of the remaining claims.” *Id.* at 5. The Board did not err in selecting Claim 53 as a representative claim for the purpose of deciding the appeal of the rejections under 35 U.S.C. §102, encompassing Claims 53-54 and 58-63. All of these claims share a common ground of rejection with Claim 53. The only §102 rejection that does not include Claim 53 is a §102(b) rejection of Claims 61-63 as anticipated by Wild or McDaniel (AZ). However, the Examiner, in separate rejections, also found Claim 53 to be anticipated by Wild as well as by McDaniel (AZ) under 35 U.S.C. §102(b). Because Claims 61-63 were rejected over some of the same references and under the same statutory provision as Claim 53, they shared common grounds of rejection with Claim 53. Therefore, the Board did not err in selecting Claim 53 as representative of the §102(b) rejection of Claims 61-63 over Wild or McDaniel (AZ).

### III.

[2] However, the Board did err in selecting Claim 53 as a representative claim for the purpose of deciding the appeal of Claims 55-57. Those claims were rejected under 35 U.S.C. §103 on a different ground than the §103 rejection of Claim 53: the §103 rejection of Claims 55-57 cited Grot in addition to the combination of references cited against Claim 53. Thus, Claims 55-57 did

not share a common ground of rejection with Claim 53. 37 C.F.R. §1.192(c)(7) does not give the Board carte blanche to ignore the distinctions between separate grounds of rejection and to select the broadest claim rejected on one ground

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as a representative of a separate group of claims subject to a different ground of rejection. The applicant has the right to have each of the grounds of rejection relied on by the Examiner reviewed independently by the Board under 35 U.S.C. §6(b) (providing that “[t]he Board of Patent Appeals and Interferences *shall* ... review adverse *decisions of examiners* upon applications for patents”) (emphasis added). Simplification and expédition of appeals cannot justify the Board’s conflating separately stated grounds of rejection by selecting, for the purpose of deciding an appeal as to one ground of rejection, a representative claim which is not itself subject to that ground of rejection. 37 C.F.R. §1.192(c)(7) does not override an applicant’s right under the statute to have each contested ground of rejection by an examiner reviewed and measured against the scope of at least one claim within the group of claims subject to that ground of rejection. *See* 35 U.S.C. §6(b) (2000). Moreover, to permit the Board to act otherwise would be tantamount to the Board’s subjecting the claims to a new ground of rejection without following the procedures specified in 37 C.F.R. §1.196(b) (permitting an applicant in this situation either to submit an appropriate amendment for reconsideration by the examiner or to request rehearing by the Board).

Here, instead of directly addressing the separate §103 rejections, the Board simply subsumed the §103 rejections into the §102 rejections and affirmed what it characterized as “[t]he Examiner’s determination that the claims pending in this application are unpatentable under 35 U.S.C. §102(a) and/or 35 U.S.C. §102(b).” *Ex parte McDaniel*, slip op. at 17. In fact, the record shows that there were no §102 rejections outstanding as to Claims 55-57 and, thus, no determination to be affirmed on that ground. This affirmance of a nonexistent rejection violated the statutory mandate that the Board review “adverse *decisions of examiners* upon applications for patents,” 35 U.S.C. §6(b) (2000) (emphasis added), as well as the strictures of 37 C.F.R. §1.196(a), which specifies that with respect to the grounds of rejection before it, the Board, in deciding the appeal, must either “affirm or reverse the *decision of the examiner* ... on the grounds and on the claims specified by the examiner, or remand the application to the examiner for

further consideration”(emphasis added).

The Board interpreted 37 C.F.R. §1.192(c)(7) to permit it to select a single claim as representative of a group of claims not subject to a common ground of rejection, once the applicant stated that all of the claims on appeal were “properly of a single group.” The Supreme Court has consistently held that courts should defer to an agency's interpretation of its own regulations. *Auer v. Robbins*, 519 U.S. 452, 461 (1997); *Stinson v. United States*, 508 U.S. 36, 45 (1993). We have formulated the degree of this deference variously as “substantial,” *American Express Co. v. United States*, 262 F.3d 1376, 1382-83 (Fed. Cir. 2001), and, in the context of a ruling of the Board, as “considerable respect,” *Kubota v. Shibuya*, 999 F.2d 517, 520, 27 USPQ2d 1418, 1420 (Fed. Cir. 1993). However, such deference is not appropriate where the agency's interpretation is “plainly erroneous or inconsistent with the regulation.” *Auer*, 519 U.S. at 461 (citing *Bowles v. Seminole Rock & Sand Co.*, 325 U.S. 410, 414 (1945)). Because the Board's interpretation ignores the requirement in the text of the regulation that the group from which a representative claim is selected be defined by a common ground of rejection, the Board's interpretation was both plainly erroneous and inconsistent with the regulation. The Board's disposition of claims 55-57 was, thus, “not in accordance with law,” 5 U.S.C. §706, and is hereby vacated. On remand, the Board should select one of Claims 55-57 and decide the appeal as to the §103 rejection of Claims 55-57 on the basis of the selected claim.

#### IV.

The Board also committed procedural error in not considering the outstanding §103 rejection of Claim 64. As with Claims 55-57, there was no §102 rejection outstanding as to Claim 64. However, unlike Claims 55-57, Claim 64 does share a common ground of rejection with Claim 53, so that selection of Claim 53 as a representative claim for the common ground of rejection was proper. What the Board should have done was to make explicit that it was affirming the §103 rejection of Claim 64, using Claim 53 as a representative claim in reliance on applicant's grouping of all the claims together. However, this procedural error is harmless. It is well settled that “anticipation is the epitome of obviousness.”

*Connell v. Sears Roebuck & Co.*, 722 F.2d 1542, 1548, 220 USPQ 193, 198(Fed. Cir. 1983) (quoting *In re Fracalossi*, 681 F.2d 792, 794, 215 USPQ 569, 571(CCPA 1982)). In view of the Board's ability under 37 C.F.R. §1.192(c)(7) to select Claim 53 as representative of the §103 rejection common to both Claim 53 and Claim 64, the Board's failure to explicitly affirm the Examiner's final rejection of Claim 64 under §103 was harmless error.

## V.

[3] On the merits, the Board's affirmance of the Examiner's final rejection of Claims 53-54 and 58-64 is correct. Claim 53, the claim selected by the Board for consideration, is very broadly drafted, reading in full as follows: "a method for detoxifying an organophosphorus compound comprising exposing said compound to recombinant bacterial organophosphorus anhydrase." McDaniel argued to the Board that a reference that did not teach the DNA sequence of the bacterial *opd* gene could not anticipate his invention. However, the Board considered only Claim 53, and its determination that "the claimed invention is not directed to the *opd* gene or the use thereof" was correct. *Ex parte McDaniel*, slip op. at 15.

The Board found that McDaniel (BY), Harper, Wild, and McDaniel (AZ) each described "the use of a recombinant bacterial organophosphorus acid anhydrase for the detoxification of an organophosphorus compound." *Id.* at 13. This determination was supported by substantial evidence, as each reference plainly discloses the use of such an enzyme in this way. McDaniel (BY) discloses that "the *opd* gene from *Pseudomonas diminuta* was sequenced and its membrane-associated gene product was expressed in heterologous genetic backgrounds from several promoter systems." McDaniel (BY) at 2306. The resultant recombinant enzyme was determined to be capable of degrading the organophosphorus compound parathion. *Id.* at 2307. Harper discloses the sequence of the *opd* gene from two bacterial species and states that the recombinant enzyme specifically degrades organophosphorus compounds. Harper at 2586. Wild discloses the cloning of the *opd* gene from *P. diminuta* into *E. coli*; some of the transformed bacteria were found to be "parathion-degrading" and the specific activities of the recombinant enzyme were found to be "similar to those in the native host." Wild at 632. McDaniel (AZ)



discloses that:

[a] plasmid ... was isolated from a *Pseudomonas diminuta* strain (PD3) known to constitutively degrade a variety of organophosphate pesticides, including parathion. The plasmid was sized and partially mapped by restriction endonuclease digestion and a *Pst*I digest was used to subclone the entire degradative plasmid into pBR322 and transformed into *E. coli*. One transformant containing pBR322 with an insert of 1270 bp was capable of degrading parathion .... McDaniel (AZ) at iii. Substantial evidence accordingly supported the Board's determination that each of these references teaches a recombinant OPA enzyme and its use in detoxifying organophosphorus compounds.

Nor is there a dispute that a different enzyme is disclosed in the '384 application, as “[a]ppellants have offered no evidence that the anhydrase encoded by the *opd* gene described in the specification differs from the anhydrase explicitly described in McDaniel (BY), Harper, or Wild.” *Ex parte McDaniel*, slip op. at 15.

## VI.

McDaniel argues that the McDaniel (BY) and Harper references were not properly prior art and should not have been considered by the Examiner in view of the declaration made by McDaniel. The Director argues that McDaniel should either have filed declarations from the non-inventor co-authors under 37 C.F.R. §1.132 or added the coauthors as inventors under 35 U.S.C. §116. In light of our affirmance of the rejection of Claims 53-54 and 58-64 based on Wild or McDaniel (AZ), we need not and do not address McDaniel's argument as to the propriety of McDaniel (BY) and Harper as prior art. Thus, our decision does not preclude McDaniel from submitting otherwise proper declarations in an attempt to remove the McDaniel (BY) and Harper references as prior art references in any rejection made in this or any continuation application McDaniel may choose to prosecute.

## VII.

[4] McDaniel also argues that U.S. Patent No. 5,484,728 to Serdar, et al. (“the Amgen patent”)

claims the same invention but was granted over the same prior art. McDaniel argues that for the same reasons that claims

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were allowed to Amgen, the similar claims in McDaniel's application should be patentable to him. He thus contends that the rejection of his claims was in error. We disagree. It is well settled that the prosecution of one patent application does not affect the prosecution of an unrelated application. *In re Wertheim*, 541 F.2d 257, 264, 191 USPQ 90, 97(CCPA 1976) (holding that "[i]t is immaterial in ex parte prosecution whether the same or similar claims have been allowed to others"). Accordingly, McDaniel's arguments with respect to the Amgen patent are unavailing.

### CONCLUSION

The Board's selection of Claim 53 was correct as a matter of law with respect to the §102 rejections of Claims 53-54 and 58-63, and its construction of Claim 53 was correct. The Board's finding that Claims 53-54 and 58-63 were anticipated by the cited references was supported by substantial evidence. The Board's holding with respect to Claim 64 constituted harmless error, since that claim shared a common ground of rejection with Claim 53. However, the Board erred in failing to consider the outstanding §103 rejection of Claims 55-57. The judgment of the Board is accordingly

***AFFIRMED-IN-PART, VACATED-IN-PART, AND REMANDED.***

### COSTS

No costs.

### Concurring/Dissenting Opinion Text

#### Concurrence/Dissent By:

Mayer, C.J., dissenting-in-part.

Because Steven McDaniel affirmatively stated that “claims 53-64 are all properly of a single group” and stand or fall together, I respectfully dissent from Part III of the court's opinion. McDaniel is the master of his own case, *Air Products and Chemicals v. Reichhold Chemicals, Inc.*, 755 F.2d 1559, 1562, 225 USPQ 121, 123(Fed. Cir. 1985), and in stating that claims 53-64 stand or fall together, he has waived any argument that claims 55-57 are patentable for reasons independent of claim 53. Therefore, I would hold him to his position, as the Board of Patent Appeals and Interferences did.

**- End of Case -  
A0A5U9F6E9**

Tec Air Inc. v. Denso Manufacturing Michigan Inc. (CA FC) 52 USPQ2d 1294

**Tec Air Inc. v. Denso Manufacturing Michigan Inc.**

**U.S. Court of Appeals Federal Circuit  
52 USPQ2d 1294**

**Decided September 30, 1999  
No. 99-1011**

**Headnotes**

**PATENTS**

**1. Patentability/Validity -- Anticipation -- Prior sale -- Degree of development  
(§ 115.0707.05)**

Reasonable jury could have found that infringement plaintiff's offers to sell fan blades did not raise on-sale bar of 35 U.S.C. Section 102(b), since evidence supports finding that subject matter of offers does not fully anticipate claimed invention, and since defendant does not argue that it would have rendered invention of patents in suit obvious; whether invention was ready for

patenting at time of offers is irrelevant under these circumstances, since subject matter of commercial offer for sale must "be something within the scope of the claim."

**2. Patentability/Validity -- Obviousness -- Combining references (§ 115.0905)**

Reasonable jury could have found that invention of patents for apparatus and method of molding plastic fan blades was not obvious in view of prior art patent and method in combination, since combination would be inoperable for its intended purpose, and since jury reasonably could have found that prior patent taught away from its combination with prior art method.

**3. Patentability/Validity -- Obviousness -- Secondary considerations generally (§ 115.0907)**

Plaintiff presented sufficient objective evidence to rebut any showing that invention of patents for apparatus and method of molding plastic fan blades was obvious, since evidence showed that millions of fan blades made using patented method were sold, since these sales figures, even without market

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share data, constitute evidence of commercial success, since evidence shows nexus between sales and patented invention, and since plaintiff offered evidence that invention satisfied long-felt but unmet need.

**REMEDIES**

**4. Monetary -- Damages -- Patents -- Reasonable royalty (§ 510.0507.03)**

Jury properly applied "entire market value" rule in awarding damages to plaintiff for defendant's

infringement of patents for apparatus and method of molding plastic fan blades, since evidence shows that defendant did not sell its radiator and condenser assemblies without fans, that performance and price of entire system were of paramount importance to its customers, that customers wanted fans balanced to certain specification, and that defendant could not meet that specification after abandoning patented method, and since from this evidence, jury could have reasonably concluded that demand for entire assembly depended upon patented invention.

**Particular patents -- General and mechanical -- Fans and blowers**

4,047,692, Swin, apparatus for molding dynamically balanced fans, judgment that patent is not invalid affirmed.

4,107,257, Swin, method for molding dynamically balanced fans, judgment that patent is not invalid affirmed.

**Case History and Disposition:**

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Appeal from the U.S. District Court for the Northern District of Illinois, Manning, J.

Action by Tec Air Inc. against Denso Manufacturing Michigan Inc., f/k/a Nippondenso Manufacturing USA Inc., and Denso Corp., k/k/a Nippondenso Co. Ltd., for patent infringement. Defendant appeals from denial of its motion for judgment as matter of law, or for new trial, on issues of patent validity and damages. Affirmed.

Related decision: 49 USPQ2d 1944 .

**Attorneys:**

Jerold A. Jacover, Richard A. Kaplan, Rodney A. Daniel, Bradley G. Lane, and James M. McCarthy, of Brinks, Hofer, Gilson & Lione, Chicago, Ill., for plaintiff-appellee.

William A. Streff, Jr., of Kirkland & Ellis, Chicago; Paul R. Steadman and Jay I. Alexander, of Kirkland & Ellis, Washington, D.C.; Kenneth J. Jurek, and Rosanne J. Faraci, of McDermott, Will & Emery, Chicago, for defendants-appellants.

**Judge:**

Before Mayer, chief judge, and Michel and Lourie, circuit judges.

**Opinion Text**

**Opinion By:**

Mayer, C.J.

Denso Manufacturing Michigan, Inc. and Denso Corporation (collectively "Denso") appeal the September 24, 1998 judgment of the United States District Court for the Northern District of Illinois, No. 91-CV-4488, which was entered after the court denied Denso's motion for judgment as a matter of law, or alternatively, for a new trial on the issues of patent validity and damages. We affirm.

***Background***

Tec Air, Inc. ("Tec Air") owns U.S. Patent Nos. 4,047,692 and 4,107,257 ("the Swin patents"), both of which have effective filing dates of September 24, 1975. The Swin patents describe a method of and a device for making properly balanced, injected-molded fans. One way to balance a plastic fan is to use balance "pads," "lugs," or "plugs," which are deposits of plastic located in appropriate places on the fan. To create these lugs, a hollow column is formed in a steel fan

mold, which fills with molten plastic during the injection-molding process. When Tec Air entered the fan molding business in 1972, like other manufacturers, it used several methods of creating these columns, such as grinding or drilling holes in mold inserts and refilling them if needed. A mold insert forms a portion of the overall fan. Tec Air also inserted replaceable brass rods into hollowed-out sections of the mold insert, which are drilled more easily because brass is a softer metal than steel (the "brass plug method"). In June 1974, Tec Air's employee, Richard Swin, Sr., conceived the method disclosed in the Swin patents--inserting adjustable screws into hollowed-out sections of the mold insert that is used to form the fan hub. These screws are accessible from the front or cavity-side of the mold.

Throughout the development of the claimed invention, Tec Air continued to market its fans and fan molds. For example, in June 1974, Tec Air offered to sell Keeprite Products ("Keeprite") injected-molded fans and the corresponding mold. Keeprite placed an order in July 1974 and Tec Air created drawings for the Keeprite fan. One drawing, dated August 16, 1974, shows "balance plugs" on the fan, but does not specify the method of creating them. Before September 24, 1974, Tec Air asked its mold maker, Jack Dearhammer at Mid City Tool & Die, to

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quote it a price for making a mold insert for the Keeprite fan. The sketch used for this price quotation did not show balance plugs, but Dearhammer ultimately made the mold insert capable of producing balance plugs by inserting adjustable screws into hollowed-out sections of the mold. In another attempt to solicit business, Tec Air sent sample fans to Howard Industries on August 14, 1974. These fans were model number 4B-60-21. On August 13, 1974, Dearhammer returned to Tec Air the mold insert used to make the 4B-60-21 fan, after he had modified it to include the patented invention's adjustable screws. Prior to sending the mold to Dearhammer, however, Tec Air accumulated thousands of the 4B-60-21 fans in its inventory, which were made by prior art balancing techniques.

In 1991, Tec Air sued Denso for infringement because it manufactured radiator and condenser assemblies that included a fan that was balanced according to the claimed method. Tec Air won the infringement phase of the trifurcated trial, which Denso does not appeal. A jury then heard the invalidity phase of the suit, in which Denso argued that the patents are invalid because Tec Air offered the invention for sale more than one year before the effective filing date and because



the invention of the claims would have been obvious. The jury returned special interrogatories indicating that Tec Air neither sold nor offered the invention for sale before the critical date and that the patented invention would not have been obvious. The same jury subsequently awarded damages of \$25.2 million, which corresponds to a royalty of 6.5% of the infringing sales of Denso's entire radiator and condenser assemblies, but is nevertheless less than the royalty requested by Tec Air. Denso moved for judgment as a matter of law, or alternatively, for a new trial on the validity and damages issues.

The court denied the motion for judgment as a matter of law because, although the evidence showed that Tec Air possessed mold inserts having adjustable screws before the critical date, there was evidence that Tec Air did not use these inserts to create commercial products. In addition, the court determined not only that Denso failed to establish a *prima facie* case of obviousness for lack of a suggestion to combine the cited references, but also that Tec Air produced sufficient objective evidence of nonobviousness. The court also held that the jury properly used the entire market value rule in measuring damages because each Denso assembly was a single functioning unit, which included the infringing fan. The court then denied Denso's motion for a new trial because the evidence was sufficient to support the invalidity verdict and the damage award was neither excessive nor the product of improper considerations. This appeal followed.

### **Discussion**

"We review a trial court's decision on a motion for judgment as a matter of law following a jury verdict by reapplying its own standard of review. Therefore, for [Denso] to prevail on appeal it must prove that the jury's factual findings were not supported by substantial evidence or that the facts were not sufficient to support the conclusions necessarily drawn by the jury on the way to its verdict." *Applied Med. Resources Corp. v. United States Surgical Corp.*, 147 F.3d 1374, 1376, 47 USPQ2d 1289, 1290 (Fed. Cir. 1998) (citations omitted). In evaluating whether Denso met this standard, "we must consider the evidence of record in the light most favorable to [Tec Air], drawing all reasonable inferences in its favor, without disturbing the jury's credibility determinations or substituting our resolutions of conflicting evidence for those of the jury." *Id.* at 1376-77, 47 USPQ2d at 1291. If no reasonable person could have reached a verdict for Tec Air in light of the record before the jury, Denso will prevail. *See id.* at 1376, 47 USPQ2d at 1291.

## **On-Sale Bar**

"The ultimate determination that a product was placed on sale under [35 U.S.C. Section 102(b) (1994)] is a question of law, based on underlying facts." *Ferag AG v. Quipp Inc.*, 45 F.3d 1562, 1566, 33 USPQ2d 1512, 1514-15 (Fed. Cir. 1995). To prove that the Swin patents are invalid for violating the on-sale bar, Denso "must demonstrate by clear and convincing evidence that there was a definite sale or offer to sell more than one year before the application for the subject patent, and that the subject matter of the sale or offer to sell fully anticipated the claimed invention or would have rendered the claimed invention obvious by its addition to the prior art." *Id.* (internal quotations omitted); see also *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 119 S.Ct. 304, 311, 48 USPQ2d 1641, 1647 (1998) ("First, the product must be the subject of a commercial offer for sale."); *Scaltech Inc. v. Retec/Tetra, L.L.C.*, 178 F.3d 1378, 1383, 51 USPQ2d 1055, 1058 (Fed. Cir. 1999) (" [T]he first determination in the Section 102(b) analysis must be whether the subject of the barring activity

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met each of the limitations of the claim, and thus was an embodiment of the claimed invention."). If this subject matter anticipates the claimed invention or would have rendered it obvious, the invention itself must also have been "ready for patenting" at the time of the offer or sale--e.g., the invention must have been reduced to practice or embodied in "drawings or other descriptions . . . that [are] sufficiently specific to enable a person skilled in the art to practice the invention." *Pfaff*, 119 S.Ct. at 312, 48 USPQ2d at 1647.

[1] Denso claims that Tec Air offered the invention for sale on June 26, 1974 to Keeprite and on August 14, 1974 to Howard Industries, both prior to the critical date of September 24, 1974. According to Tec Air, although it ultimately shipped fans made according to the invention to these customers, it did not specify the balancing technique in its offers and it did not intend to use the patented one when it made the offers. Viewing the evidence in the light most favorable to Tec Air, we hold that the jury reasonably could have found that Tec Air's offers to Keeprite and Howard Industries did not raise the on-sale bar because the subject matter of these offers does not fully anticipate the claimed invention and Denso does not argue that it would have rendered the invention obvious.

Denso argues that no reasonable jury could have found that the reference to "balance plugs" on the August 16, 1974 drawing for the Keeprite fan meant anything other than balance plugs made according to the Swin patents because the mold was ultimately made with adjustable screws. The drawing itself sheds no light on the method of making the fan. To buttress its claim, therefore, Denso cites Dearhammer's testimony that he thought the notation referred to adjustable screws and that Tec Air employees called the adjustable screws "balance plugs." Tec Air's employee Richard Swin, Jr. testified, however, that the plastic lugs formed on the fan blade are called "balance plugs," regardless of the method used to create them. He also testified that Tec Air intended to use the brass plug method to balance the Keeprite fan when it made the August 1974 drawing and did not tell Dearhammer that adjustable screws would be used until October 29, 1974, when it sent him specifications for the first time. Dearhammer admitted that the sketch he used to quote a price for the Keeprite mold did not show adjustable screws. In light of this evidence, the jury reasonably could have found that Tec Air did not offer the patented invention for sale to Keeprite before the critical date.

Denso stresses that the August 1974 drawing shows that the invention was ready for patenting, thus satisfying the second prong of *Pfaff*. See 119 S.Ct. at 312, 48 USPQ2d at 1647. However, because the offer for sale did not involve subject matter that either anticipates the invention or would have rendered it obvious, *Pfaff*'s second prong is irrelevant. *Pfaff* did not remove the requirement that the subject matter of the commercial offer for sale "be something within the scope of the claim." *Scaltech*, 178 F.3d at 1383, 51 USPQ2d at 1058. Accordingly, Denso's reliance on *Pfaff* does not have the talismanic effect it desires.

Denso also argues that no reasonable jury could have found that the samples sent to Howard Industries with the August 14, 1974 offer letter were not made pursuant to the Swin patents because Tec Air received the modified mold the day before. It also claims that the sent fans must have had balance lugs made according to the patents because Howard Industries sent a letter in January 1975 asking Tec Air to move the "balancing lugs" on the 4B-60-21 fan. Tec Air argues that the jury reasonably could have found that the samples were made before August 13, 1974 because it had thousands of 4B-60-21 fans in inventory before it sent the mold to Mid City. Swin, Jr. testified that he selected the 4B-60-21 fan mold insert to be modified in part because Tec Air had a sufficient inventory of 4B-60-21 fans that it could ship while he tested the modified mold. Because balance lugs can be formed by several methods, the January 1975 letter does not indisputably show that Tec Air made the sent fans with the modified mold. Swin, Jr.

testified, furthermore, that he did not make any fans from the modified mold until September 1974. Denso's argument relies on an inference that Tec Air immediately ran samples from the modified mold, despite Swin, Jr.'s testimony to the contrary. Although Swin, Jr. was an interested witness, the jury could have reasonably believed him in light of the large number of 4B-60-21 fans available in Tec Air's inventory. Therefore, the court did not err in denying Denso's motion for judgment as a matter of law on the issue of validity under section 102(b).

### **Obviousness**

"Obviousness under 35 U.S.C. Section 103 [(1994)] is a legal conclusion based on factual evidence," which we review "for correctness or error as a matter of law." *In re Fine*, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988) (internal quotations omitted). These factual underpinnings include

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what a prior art reference teaches, whether a reference provides a motivation to combine its teachings with others, *see In re Beattie*, 974 F.2d 1309, 1311, 24 USPQ2d 1040, 1041-42 (Fed. Cir. 1992), whether the invention experienced commercial success, and whether it satisfied a long-felt, but unmet need, *see C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1351, 48 USPQ2d 1225, 1231 (Fed. Cir. 1998).

In reviewing "a jury special verdict on patent claim obviousness where the underlying facts have been disputed[,] . . . [w]e first presume that the jury resolved the underlying factual disputes in favor of the verdict winner and leave those presumed findings undisturbed if they are supported by substantial evidence. Then we examine the legal conclusion *de novo* to see whether it is correct in light of the presumed jury fact findings." *Jurgens v. McKasy*, 927 F.2d 1552, 1557, 18 USPQ2d 1031, 1035 (Fed. Cir. 1991) (citations omitted). The same rule also applies to special interrogatories.

To establish a *prima facie* case of obviousness, Denso must show "some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." *Fine*, 837 F.2d at 1074, 5 USPQ2d at 1598. There is no suggestion to combine, however, if a reference teaches away from its combination with another source. *See id.* at 1075, 5 USPQ2d at 1599. "A

reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant . . . [or] if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant." *In re Gurley* , 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994). If when combined, the references "would produce a seemingly inoperative device," then they teach away from their combination. *In re Spinnoble* , 405 F.2d 578, 587, 160 USPQ 237, 244 (CCPA 1969); *see also In re Gordon* , 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (finding no suggestion to modify a prior art device where the modification would render the device inoperable for its intended purpose).

Denso argues that the court should have granted its motion for judgment as a matter of law because the invention of the claims would have been obvious over U.S. Patent No. 3,136,001 ("the Gelbard patent") in combination with the brass plug method. Although Tec Air disclosed the Gelbard patent to the Patent and Trademark Office during prosecution of the Swin patents, the details of the brass plug method were not before the examiner. The Gelbard patent teaches using adjustable screws to create balance lugs on the blade tips of a molded fan. Unlike the screws of the Swin patents, these screws are accessible from the rear of the mold.

[2] Because, in the brass plug method, the operator drills the brass plugs from the cavity-side of the mold, combining this method with the teachings of the Gelbard patent results in cavity-side accessible screws. The Gelbard patent teaches, however, that each of its adjustable threaded members has "a non-threaded or smooth tip extending into a recess," which comes into contact with the molten plastic. Col. 1, ll. 64-67. This teaching is consistent with the conventional wisdom as late as 1974, which counseled against arranging screw heads to face the cavity-side of the mold because molten plastic would (1) enter the screw slot, which would be difficult to remove, and (2) likely seep behind the screw head and jam the screw, according to Tec Air's expert, Dr. Williamson. Because the brass plugs-Gelbard patent combination would be inoperable for its intended purpose--no screw driver would be able to turn the smooth-headed screws from the cavity-side of the mold--the jury reasonably could have found that the Gelbard patent taught away from its combination with the brass plug method.

Alternatively, even assuming that Denso established a *prima facie* case of obviousness, Tec Air presented sufficient objective evidence of nonobviousness to rebut it. "[O]bjective evidence of non-obviousness may be used to rebut a *prima facie* case of obviousness based on prior

art references." *WMS Gaming Inc. v. International Game Tech.* , -- F.3d --, --, 51 USPQ2d 1385, 1400 (Fed. Cir. 1999). This type of evidence "may include commercial success [and] long-felt but unsolved need." *Id.* "Whether the evidence presented suffices to rebut the *prima facie* case is part of the ultimate conclusion of obviousness and is therefore a question of law." *In re Rouffet* , 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998).

[3] According to the trial court, Tec Air presented evidence that millions of fans were sold by both Tec Air and Denso and that the patented method eliminated the "tedious, haphazard, and expensive process of drilling the surface of the mold cavity." Based on Tec Air's sales evidence, the jury reasonably could have found that the invention enjoyed

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commercial success. Denso argues that this evidence is insufficient because Tec Air failed to provide market share data. Although sales figures coupled with market data provide stronger evidence of commercial success, sales figures alone are also evidence of commercial success. *See Cable Elec. Prods., Inc. v. Genmark, Inc.* , 770 F.2d 1015, 1027, 226 USPQ 881, 888 (Fed. Cir. 1985) ("[I]nformation [about market share] might bolster the existence in fact of any commercial success . . . demonstrated by [mere sales data] . . ."), *overruled on other grounds by Midwest Indus., Inc. v. Karavan Trailers, Inc.* , 175 F.3d 1356, 1358-61, 50 USPQ2d 1672, 1674-76 (Fed. Cir. 1999) (en banc); *see also In re Huang* , 100 F.3d 135, 140, 40 USPQ2d 1685, 1689 (Fed. Cir. 1996) ("This court has noted in the past that evidence related solely to the number of units sold provides a very weak showing of commercial success, if any."); *see, e.g., Gambro Lundia AB v. Baxter Healthcare Corp.* , 110 F.3d 1573, 1579, 42 USPQ2d 1378, 1384 (Fed. Cir. 1997) (" [T]he record contains significant evidence of the commercial success of [the] invention. The record shows that [a competitor] sold over 14,800 dialysis machines allegedly incorporating the [claimed] invention since 1987."); *J.T. Eaton & Co. v. Atlantic Paste & Glue Co.* , 106 F.3d 1563, 1566, 1572, 41 USPQ2d 1641, 1643, 1648 (Fed. Cir. 1997) (affirming a finding that "sales evidence . . . shows [strong commercial] success," where the "sales evidence" consisted solely of the patentee's "\$17 million of sales from 1979 through 1984, and its \$4 million of annual sales from 1985 through 1989"). Denso also argues that Tec Air failed to show a nexus between the sales and the patented invention. "A *prima facie* case of nexus is generally made out when the patentee shows both

that there is commercial success, and that the thing (product or method) that is commercially successful is the invention disclosed and claimed in the patent." *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.* , 851 F.2d 1387, 1392, 7 USPQ2d 1222, 1226 (Fed. Cir. 1988). The evidence shows that Tec Air sold approximately two million fans per month, all of which were made according to the patented method. See *Akzo N.V. v. United States Int'l Trade Comm'n* , 808 F.2d 1471, 1481, 1 USPQ2d 1241, 1246 (Fed. Cir. 1986) (finding commercial success where a product made by a patented method was commercially successful).

According to the trial court, Tec Air also offered testimony that "there was a long-felt but unmet need to create a more efficient method to achieve fan balance" prior to the Swin patents. Swin, Sr. testified that Tec Air used several unsatisfactory balancing techniques before adopting the patented one. Dr. Williamson testified that the industry experienced problems with the prior art machining methods. Moreover, after Denso ceased infringing the Swin patents, it had to resort to less effective methods of balancing the fans. Based on this evidence, the jury reasonably could have found there was a long-felt but unmet need in the prior art for an improved balancing method, which the Swin patents satisfied.

In light of this objective evidence of nonobviousness and the lack of evidence of a suggestion to combine the references, the court properly denied Denso's motion for judgment as a matter of law on the obviousness issue.

### **Damages**

In addition to arguing that the court should have granted its motion for judgment as a matter of law on the damages issue, Denso argues that the court should have granted a new trial on this issue. We review the trial court's denial of a motion for a new trial for abuse of discretion. See *DMI, Inc. v. Deere & Co.* , 802 F.2d 421, 427, 231 USPQ 276, 280 (Fed. Cir. 1986). "That question turns on whether an error occurred in the conduct of the trial that was so grievous as to have rendered the trial unfair." *Id.*

The jury awarded damages based on the entire market value rule, "which permits recovery of damages based on the value of the entire apparatus containing several features, where the patent related feature is the basis for customer demand." *State Indus., Inc. v. Mor-Flo Indus., Inc.* , 883 F.2d 1573, 1580, 12 USPQ2d 1026, 1031 (Fed. Cir. 1989). The entire market value rule is appropriate where both the patented and unpatented components together are "analogous to components of a single assembly," "parts of a complete machine," or "constitute a functional

unit," but not where the unpatented components "have essentially no functional relationship to the patented invention and . . . may have been sold with an infringing device only as a matter of convenience or business advantage." *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1550, 35 USPQ2d 1065, 1073 (Fed. Cir. 1995) (en banc).

[4] Denso argues that the jury could not have reasonably found that (1) the patented and unpatented components comprised a single functional unit and (2) the basis for the customer demand was the method of balancing the fan inside the assembly. Denso's

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damage expert testified that the motors used with the radiator and condenser assemblies required fans. Denso did not sell these assemblies without fans. Denso's internal documents stress, moreover, that the performance and price of the *entire system* were paramount to its customers. This evidence amply supports the finding that the assemblies were a single functional unit. In addition, the evidence shows that customers wanted fans that were balanced to a certain specification and once Denso abandoned the patented method, it could not meet the 2.0 gm-cm balance specification. Denso argues that its customers did not care how the fans in the assemblies were balanced. However, after Denso changed its specification, one customer complained and required Denso to rebalance the fans. From this evidence, the jury could have reasonably concluded that the demand for the entire assembly depended on the patented invention.

Thus, the jury properly applied the entire market value rule and Denso failed to demonstrate that the trial court legally erred in denying its motion for judgment as a matter of law or abused its discretion in declining to grant a new trial on the damages issue.

### **Conclusion**

Accordingly, the judgment of United States District Court for the Northern District of Illinois is affirmed.

**AFFIRMED**



**- End of Case -**

In re Gurley (CA FC) 31 USPQ2d 1130

**In re Gurley**

**U.S. Court of Appeals Federal Circuit  
31 USPQ2d 1130**

**Decided June 15, 1994  
No. 94-1025**

**Headnotes**

**PATENTS**

**1. Patentability/Validity -- Obviousness -- Relevant prior art -- In general  
(§ 115.0903.01)**

Prior art reference that "teaches away" from claimed invention is significant factor to be considered in determining unobviousness, but nature of such teaching is highly relevant, and must be weighed in substance; known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for same use.

**2. Patentability/Validity -- Obviousness -- Relevant prior art -- Particular inventions  
(§ 115.0903.03)**

Board of Patent Appeals and Interferences did not err by rejecting as obvious claims for epoxy-based printed circuit material that is bendable and shape-retaining, since prior art reference constituted prima facie case of obviousness, and since applicant's assertion that reference "teaches away" from claimed invention, by indicating that epoxy-based boards are inferior to boards made with polyester-imide resins, was insufficient to establish patentability, in view of applicant's failure to assert any discovery beyond what was known to art.

**Case History and Disposition:**

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Appeal from the U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences.

Page 1131

Patent application, serial no. 07/524,373, filed by Francis S. Gurley. From decision of the Board of Patent Appeals and Interferences rejecting claims, applicant appeals. Affirmed.

**Attorneys:**

Michael A. Cantor, of Fishman, Dionne & Cantor, Windsor, Conn., for appellant.

James T. Carmichael, associate solicitor, Fred E. McKelvey, solicitor, and Lee E. Barrett, associate solicitor, PTO, Arlington, Va., for appellee.

**Judge:**

Before Newman, Plager, and Clevenger, circuit judges.

**Opinion Text**

**Opinion By:**

Newman, J.

Francis S. Gurley appeals the decision of the Board of Patent Appeals and Interferences, 1 affirming the Examiner's rejection of all of the claims of application Serial No. 07/524,373. The Board determined that these claims are unpatentable for obviousness in terms of 35 U.S.C. Section 103, in view of Japanese Patent Specification No. 56-76591 (Yamaguchi) and the prior art set forth in Gurley's specification.

We agree that the prior art constituted a *prima facie* case of obviousness, placing on Mr. Gurley the burden of coming forward with evidence and argument in rebuttal. *See In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). Mr. Gurley did not meet that burden.

**Discussion**

Claim 1 of the Gurley patent application is representative, and defines the Gurley invention as follows:

1. A printed circuit material for forming shape retaining multi-planar circuit boards consisting essentially of:

a substrate material made of a nonwoven web impregnated with an epoxy;  
said substrate having a thickness of between about 0.010 inch and 0.062 inch;

at least one sheet of electrically conductive material laminated to at least one side of said substrate;

said electrically conductive sheet having a thickness of between 0.0006 inch and about 0.003 inch; and

said laminate of epoxy impregnated nonwoven substrate material and electrically conductive material being capable of being formed and bent into a shape retaining multi-planar shape at room temperature without requiring fastener means to retain said multi-planar shape.

Gurley states that his invention is directed to an epoxy based printed circuit material that is bendable and shape-retaining, wherein the epoxy has a glass transition temperature at or near room temperature. 2 The epoxy is not otherwise described or limited. The Yamaguchi reference describes a printed circuit material for forming circuit boards similar to those of Gurley, comprising a fibrous substrate impregnated with a polyester-imide resin instead of the epoxy resin claimed by Gurley. The nature of the resin is the only significant difference from the prior art circuit material. However, epoxy is mentioned by Yamaguchi as known for this use.

According to Yamaguchi, circuit boards having an epoxy-impregnated fibrous substrate have "relatively acceptable dimensional stability" and "some degree of flexibility," but are inferior to circuit boards made with his polyester-imide resins.

Referring to the statement of inferiority in the Yamaguchi reference, Mr. Gurley argues that Yamaguchi "teaches away" from Gurley's invention. A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. The degree of teaching away will of course depend on the particular facts; in general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant. See *United States v. Adams*, 383 U.S. 39, 52, 148 USPQ 479, 484 (1966) ("known disadvantages in old devices which would naturally discourage the search for new inventions may be taken into account in determining obviousness"); *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1550-51, 220 USPQ 303, 311 (Fed. Cir. 1983) (the totality of a reference's teachings must be considered), *cert. denied*, 469 U.S. 851 (1984); *In re Spinnoble*, 405 F.2d 578, 587, 160 USPQ 237, 244 (CCPA 1969) (references taken in combination teach away

since they would produce a "seemingly inoperative device"); *In re Caldwell* , 319 F.2d 254, 256, 138 USPQ 243, 245 (CCPA 1963) (reference teaches away if it leaves the impression that the product would not have the property sought by the applicant).

[1] Gurley's position appears to be that a reference that "teaches away" can not serve to create a *prima facie* case of obviousness. We agree that this is a useful general rule. However, such a rule can not be adopted in the abstract, for it may not be applicable in all factual circumstances. Although a reference that teaches away is a significant factor to be considered in determining unobviousness, the nature of the teaching is highly relevant, and must be weighed in substance. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use.

[2] The facts in Gurley's record are that this use of epoxy was known, the structure of these circuit boards was known, and epoxy had been used for Gurley's purpose. We share Gurley's view that a person seeking to improve the art of flexible circuit boards, on learning from Yamaguchi that epoxy was inferior to polyester-imide resins, might well be led to search beyond epoxy for improved products. However, Yamaguchi also teaches that epoxy is usable and has been used for Gurley's purpose. The Board recognized Yamaguchi's teaching of the deficiencies of epoxy-impregnated material, but observed that Gurley did not distinguish his epoxy product from the product described by Yamaguchi. On the facts of this case, Gurley's "teaching away" argument was insufficient to establish patentability. Gurley did not offer specific epoxies, or improved properties, and we are not presented with the question of whether any such products might meet the requirements of patent ability. Even reading Yamaguchi's description as discouraging use of epoxy for this purpose, Gurley asserted no discovery beyond what was known to the art.

The Board correctly held that Gurley's invention would have been obvious in view of the Yamaguchi reference in combination with the prior art set forth in Gurley's specification.

**AFFIRMED**

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Footnotes

Footnote 1. *Ex parte Gurley* , No. 93-0384 (Bd. Pat. App. & Interf. Apr. 14, 1993).

Footnote 2. Glass transition is an indicator of a resin's flexibility. It is defined as the temperature at which the resin "loses its hardness or brittleness, becomes more flexible, and takes on rubbery or leathery properties." Board Op. at 8 (citing Stille, *Introduction to Polymer Chemistry* 30-31 (1962)).

- End of Case -

In re Fine (CA FC) 5 USPQ2d 1596

**In re Fine**

**U.S. Court of Appeals Federal Circuit  
5 USPQ2d 1596**

**Decided January 26, 1988  
No. 87-1319**

**Headnotes**

**PATENTS**

**1. Patentability/Validity -- Obviousness -- Evidence of (§ 115.0903)**

Patent and Trademark Office improperly rejected claimed invention for obviousness since nothing in cited references, either alone or in combination, suggests or teaches claimed invention, since there is consequently no support for PTO's conclusion that substitution of one type of detector for another in prior art system, resulting in claimed invention, would have been obvious, and since PTO therefore failed to satisfy its burden of establishing prima facie case of



obviousness by showing some objective teaching or generally available knowledge that would lead one skilled in art to combine teachings of existing references.

**2. Patentability/Validity -- Obviousness -- In general (§ 115.0901)**

Obviousness is tested by what combined teachings of prior art references would have suggested to those of ordinary skill in art, not by whether particular combination of elements from such references might have been "obvious to try."

**3. Patentability/Validity -- Obviousness -- Evidence of (§ 115.0903)**

Patent and Trademark Office erred, in rejecting as obvious system for detecting and measuring minute quantities of nitrogen compounds, by failing to recognize that appealed claims can be distinguished over combination of prior art references, in view of evidence demonstrating that prior art does not teach claimed temperature range, despite some overlap of preferred temperature ranges for claimed invention and prior art, since purposes of preferred temperature ranges are different and overlap is mere happenstance.

**4. Patentability/Validity -- Obviousness -- In general (§ 115.0901)**

Dependent claims are non-obvious under 35 USC 103 if claims from which they depend are non-obvious.

**Case History and Disposition:**

Appeal from the U.S. Patent and Trademark Office Board of Patent Appeals and Interferences.

Application for patent by David H. Fine, Serial No. 512,374. From decision of Board of Patent Appeals and Interferences affirming rejection of application, applicant appeals. Reversed; Smith, circuit judge, dissenting with opinion.

**Attorneys:**

Morris Relson and Darby & Darby, New York, N.Y., (Beverly B. Goodwin with them on the brief) for appellant.

Lee E. Barrett, associate solicitor, Arlington, Va., (Joseph F. Nakamura, solicitor, and Fred E. McKelvey, deputy solicitor, with him on the brief) for appellee.

**Judge:**

Before Friedman, Smith, and Mayer, circuit judges.

**Opinion Text**

**Opinion By:**

Mayer, J.

David H. Fine appeals from a decision of the Board of Patent Appeals and Interferences of the United States Patent and Trademark Office (Board) affirming the rejection of certain claims of his application, Serial No. 512,374, and concluding that his invention would have been obvious to one of ordinary skill in the art and was therefore unpatentable under 35 U.S.C. §103. We reverse.

## Background

### **A. *The Invention* .**

The invention claimed is a system for detecting and measuring minute quantities of nitrogen compounds. According to Fine, the system has the ability to detect the presence of nitrogen compounds in quantities as minute as one part in one billion, and is an effective means to detect drugs and explosives, which emanate nitrogen compound vapors even when they are concealed in luggage and closed containers.

The claimed invention has three major components: (1) a gas chromatograph which separates a gaseous sample into its constituent parts; (2) a converter which converts the nitrogen compound effluent output of the chromatograph into nitric oxide in a hot, oxygen-rich environment; and (3) a detector for measuring the level of nitric oxide. The claimed invention's sensitivity is achieved by combining nitric oxide with ozone to produce nitrogen dioxide which concurrently causes a detectable luminescence. The luminescence, which is measured by a visual detector, shows the level of nitric oxide which in turn is a measure of nitrogen compounds found in the sample.

The appealed claims were rejected by the Patent and Trademark Office (PTO) under 35 U.S.C. §103. Claims 60, 63, 77 and 80 were rejected as unpatentable over Eads, Patent No. 3,650,696 (Eads) in view of Warnick, et al., Patent No. 3,746,513 (Warnick). Claims 62, 68, 69, 79, 85 and 86 were rejected as unpatentable over Eads and Warnick in view of Glass, et al., Patent No. 3,207,585 (Glass).

### **B. *The Prior Art* .**

#### **1. *Eads Patent* .**

Eads discloses a method for separating, identifying and quantitatively monitoring sulfur compounds. The Eads system is used primarily in "air pollution control work in the scientific characterization of odors from sulfur compounds."

The problem addressed by Eads is the tendency of sulfur compounds "to adhere to or react with the surface materials of the sampling and analytical equipment, and/or react with the liquid or gaseous materials in the equipment." Because of this, the accurate

cy of measurement is impaired. To solve the problem, the Eads system collects an air sample containing sulfur compounds in a sulfur-free methanol solution. The liquid is inserted into a gas chromatograph which separates the various sulfur compounds. The compounds are next sent through a pyrolysis furnace where they are oxidized to form sulfur dioxide. Finally, the sulfur dioxide passes through a measuring device called a microcoulometer which uses titration cells to calculate the concentration of sulfur compounds in the sample.

## **2. Warnick Patent .**

Warnick is directed to a means for detecting the quantity of pollutants in the atmosphere. By measuring the chemiluminescence of the reaction between nitric oxide and ozone, the Warnick device can detect the concentration of nitric oxide in a sample gaseous mixture.

Warnick calls for "continuously flowing" a sample gaseous mixture and a reactant containing ozone into a reaction chamber. The chemiluminescence from the resulting reaction is transmitted through a light-transmitting element to produce continuous readouts of the total amount of nitric oxide present in the sample.

## **3. Glass Patent.**

The invention disclosed in Glass is a device for "completely burning a measured amount of a substance and analyzing the combustion products." A fixed amount of a liquid petroleum sample and oxygen are supplied to a flame. The flame is then spark-ignited, causing the sample to burn. The resulting combustion products are then collected and measured, and from this measurement the hydrogen concentration in the sample is computed.

## **C. The Rejection .**

The Examiner rejected claims 60, 63, 77 and 80 because "substitution of the [nitric oxide] detector of Warnick for the sulfur detector of Eads would be an obvious consideration if interested in nitrogen compounds, and would yield the claimed invention." He further asserted that "Eads teaches the [claimed] combination of chromatograph, combustion, and detection, in that order. . . . Substitution of detectors to measure any component of interest is well within the skill of the art." In rejecting claims 62, 68, 69, 79, 85 and 86, the Examiner said, "Glass et al.

teach a flame conversion means followed by a detector, and substitution of the flame conversion means of Glass et al. for the furnace of Eads would be an obvious equivalent and would yield the claimed invention." The Board affirmed the Examiner's rejection.

### **Discussion**

#### **A. Standard of Review .**

Obviousness under 35 U.S.C. §103 is "a legal conclusion based on factual evidence." *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1535, 218 USPQ 871, 876 (Fed. Cir. 1983) (quoting *Stevenson v. Int'l Trade Comm'n*, 612 F.2d 546, 549, 204 USPQ 276, 279 (CCPA 1979)). Therefore, an obviousness determination is not reviewed under the clearly erroneous standard applicable to fact findings, *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 956, 220 USPQ 592, 596 (Fed. Cir. 1983); it is "reviewed for correctness or error as a matter of law." *In re De Blauwe*, 736 F.2d 699, 703, 222 USPQ 191, 195 (Fed. Cir. 1984).

To reach a proper conclusion under §103, the decisionmaker must step backward in time and into the shoes worn by [a person having ordinary skill in the art] when the invention was unknown and just before it was made. In light of *all* the evidence, the decisionmaker must then determine whether . . . the claimed invention as a whole would have been obvious at *that* time to *that* person. 35 U.S.C. §103. The answer to that question partakes more of the nature of law than of fact, for it is an ultimate conclusion based on a foundation formed of all the probative facts.

*Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1566, 1 USPQ2d 1593, 1595-96 (Fed. Cir. 1987).

#### **B. Prima Facie Obviousness .**

Fine says the PTO has not established a *prima facie* case of obviousness. He contends the references applied by the Board and Examiner were improperly combined, using hindsight reconstruction, without evidence to support the combination and in the face of contrary teachings in the prior art. He argues that the appealed claims were rejected because the PTO thought it would have been "obvious to try" the claimed invention, an unacceptable basis for rejection.

[1] We agree. The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. See *In re Piasecki*, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-87 (Fed. Cir. 1984). It can satisfy this burden only by showing some objective teaching in the prior art or that

knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. *In re Lalu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984); *see also Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*,

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776 F.2d 281, 297 n.24, 227 USPQ 657, 667 n.24 (Fed. Cir. 1985); *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). This it has not done. The Board points to nothing in the cited references, either alone or in combination, suggesting or teaching Fine's invention.

The primary basis for the Board's affirmance of the Examiner's rejection was that it would have been obvious to substitute the Warnick nitric oxide detector for the Eads sulfur dioxide detector in the Eads system. The Board reiterated the Examiner's bald assertion that "substitution of one type of detector for another in the system of Eads would have been within the skill of the art," but neither of them offered any support for or explanation of this conclusion.

Eads is limited to the analysis of sulfur compounds. The particular problem addressed there is the difficulty of obtaining precise measurements of sulfur compounds because of the tendency of sulfur dioxide to adhere to or react with the sampling analytic equipment or the liquid or gaseous materials in the equipment. It solves this problem by suggesting that the gaseous sample containing sulfur compounds be absorbed into sulfur-free methanol and then inserted into a gas chromatograph to separate the sulfur compounds.

There is no suggestion in Eads, which focuses on the unique difficulties inherent in the measurement of sulfur, to use that arrangement to detect nitrogen compounds. In fact, Eads says that the presence of nitrogen is undesirable because the concentration of the titration cell components in the sulfur detector is adversely affected by substantial amounts of nitrogen compounds in the sample. So, instead of suggesting that the system be used to detect nitrogen compounds, Eads deliberately seeks to avoid them; it warns against rather than teaches Fine's invention. *See W. L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1550, 220 USPQ 303, 311 (Fed. Cir. 1983) (error to find obviousness where references "diverge from and teach away from the invention at hand"). In the face of this, one skilled in the art would not be expected to combine a nitrogen-related detector with the Eads system. Accordingly, there is no suggestion to combine Eads and Warnick.

Likewise, the teachings of Warnick are inconsistent with the claimed invention, to some extent. The Warnick claims are directed to a gas stream from engine exhaust "continuously flowing the gaseous mixtures into the reaction chamber" to obtain "continuous readouts" of the amount of nitric oxide in the sample. The other words, it contemplates measuring the total amount of nitric oxide in a continuously flowing gaseous mixture of unseparated nitrogen constituents. By contrast, in Fine each nitrogen compound constituent of the gaseous sample is retained in the Chromatograph for an individual time period so that each exists in discrete, time-separated pulses. \* By this process, each constituent may be both identified by its position in time sequence, and measured. The claimed system, therefore, diverges from Warnick and teaches advantages not appreciated or contemplated by it.

Because neither Warnick nor Eads, alone or in combination, suggests the claimed invention, the Board erred in affirming the Examiner's conclusion that it would have been obvious to substitute the Warnick nitric oxide detector for the Eads sulfur dioxide detector in the Eads system. *ACS Hosp. Sys.*, 732 F.2d at 1575-77, 221 USPQ at 931-33. The Eads and Warnick references disclose, at most, that one skilled in the art might find it obvious to try the claimed invention. But whether a particular combination might be "obvious to try" is not a legitimate test of patentability. *In re Geiger*, 815 F.2d 868, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987); *In re Goodwin*, 576 F.2d 375, 377, 198 USPQ 1, 3 (CCPA 1978).

[2] Obviousness is tested by "what the combined teachings of the references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). But it "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." *ACS Hosp. Sys.*, 732 F.2d at 1577, 221 USPQ at 933. And "teachings of references can be combined *only* if there is some suggestion or incentive to do so." *Id.* Here, the prior art contains none.

Instead, the Examiner relies on hindsight in reaching his obviousness determination.

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But this court has said, "To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which

only the inventor taught is used against its teacher." *W. L. Gore* , 721 F.2d at 1553, 220 USPQ at 312-13. It is essential that "the decisionmaker forget what he or she has been taught at trial about the claimed invention and cast the mind back to the time the invention was made . . . to occupy the mind of one skilled in the art who is presented only with the references, and who is normally guided by the then-accepted wisdom in the art." *Id* . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

### **C. Advantage Not Appreciated by the Prior Art .**

[3] The Board erred not only in improperly combining the Eads and Warnick references but also in failing to appreciate that the appealed claims can be distinguished over that combination. A material limitation of the claimed system is that the conversion to nitric oxide occur in the range of 600°C to 1700°C. The purpose of this limitation is to prevent nitrogen from other sources, such as the air, from being converted to nitric oxide and thereby distorting the measurement of nitric oxide derived from the nitrogen compounds of the sample.

The claimed nitric oxide conversion temperature is not disclosed in Warnick. Although Eads describes a preferred temperature of 675°C to 725°C, the purpose of this range is different from that of Fine. Eads requires the 675°C to 725°C range because it affords a temperature low enough to avoid formation of unwanted sulfur trioxide, yet high enough to avoid formation of unwanted sulfides. Fine's temperature range, in contrast, does not seek to avoid the formation of sulfur compounds or even nitrogen compounds. It enables the system to break down the nitrogen compounds of the sample while avoiding the destruction of background nitrogen gas. There is a partial overlap, of course, but this is mere happenstance. Because the purposes of the two temperature ranges are entirely unrelated, Eads does not teach use of the claimed range. *See In re Geiger* , 815 F.2d at 688, 2 USPQ2d at 1278. The Board erred by concluding otherwise.

### **D. Unexpected Results .**

Because we reverse for failure to establish a *prima facie* case of obviousness, we need not reach Fine's contention that the Board failed to accord proper weight to the objective evidence of unexpected superior results. *Id* .

### **E. The "Flame" Claims .**



[4] Claims 62, 68, 69, 79, 85 and 86 relate to the oxygen-rich flame conversion means of the claimed invention. These "flame" claims depend from either apparatus claim 60 or method claim 77. Dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious. *Hartness Int'l, Inc. v. Simplimatic Eng'g Co.*, 819 F.2d 1100, 1108, 2 USPQ2d 1826, 1831 (Fed. Cir. 1987); *In re Abele*, 684 F.2d 902, 910, 214 USPQ 682, 689 (CCPA 1982); *see also In re Sernaker*, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed. Cir. 1983). In view of our conclusion that claims 60 and 77 are nonobvious, the dependent "flame" claims are also patentable.

### **Conclusion**

The Board's decision affirming the Examiner's rejection of claims 60, 62, 63, 68, 69, 77, 79, 80, 85 and 86 of Fine's application as unpatentable over the prior art under 35 U.S.C. §103 is **REVERSED**.

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### **Footnotes**

Footnote \*. The Solicitor argues that the contents of Attachment C of Fine's brief were not before the Board and may not properly be considered here. However, we need not rely on Attachment C. It is merely illustrative of the qualitative separation of nitrogen compounds which occurs in Fine's system. The fact that the various constituents exit at discrete intervals is shown by the specification which was before the Board and which may appropriately be considered on appeal. *See, e.g., Astra-Sjucos, A.B. v. United States Int'l Trade Comm'n*, 629 F.2d 682, 686, 207 USPQ 1, 5 (CCPA 1980) (claims must be construed in light of specification).

### **Dissenting Opinion Text**

#### **Dissent By:**

Smith, circuit judge, dissenting.

I respectfully dissent. I am of the firm belief that the prior art references, relied upon by the PTO

to establish its prima facie case of obviousness, in combination teach and suggest Fine's invention to one skilled in the art. Also, I firmly believe that Fine failed to rebut the PTO's prima facie case. On this basis, I would affirm the board's determination sustaining the examiner's rejection, pursuant to 35 U.S.C. §103, of Fine's claims on appeal before this court.

**- End of Case -**

Akzo N.V. v. U.S. International Trade Commission (CA FC) 1 USPQ2d 1241

**Akzo N.V. v. U.S. International Trade Commission**

**U.S. Court of Appeals Federal Circuit  
1 USPQ2d 1241**

**Decided December 22, 1986  
No. 86-877**

**Headnotes**

**PATENTS**

**1. Patentability/Validity -- Anticipation -- Prior art (§ 115.0703)**

U.S. International Trade Commission did not use impermissible "ipsissimus verbis" test in finding that claimed process for making aramid fibers was not anticipated, but rather properly found that prior art did not disclose such process to one of ordinary skill in art and that prior art reference that called for use of sulfuric acid did not call for use of 98 percent concentration critical to success of claimed process, since "concentrated sulfuric acid" is not inherently 98

percent sulfuric acid to one skilled in art.

## **2. U.S. International Trade Commission -- In general (§ 115.01)**

International Trade Commission's administrative protective order which permitted access, to confidential business information produced during discovery phase of investigation, by both parties' outside counsel, but not by management personnel or in-house counsel of either company was proper, since order did unilaterally immunize purportedly confidential documents from scrutiny of party challenging order, since order provided mechanism by which either party was free to object to designation of information as confidential, and since party challenging order failed to prove need for access to such information, nor harm to it from nondisclosure.

## **3. U.S. International Trade Commission -- Burden of proof (§ 115.05)**

International Trade Commission did not err in determining that unlawful importation of infringing aramid fibers violated Tariff Act's Section 337, 19 USC 1337, based upon its finding, supported by substantial evidence, that such importation will have tendency to injure domestic industry, despite evidence that domestic industry's profits from sale of fibers will increase notwithstanding such entry into market, since issue under Section 337 is not whether domestic industry profits will increase beyond current levels but whether importer's presence in market will substantially injure domestic industry's business during remaining life of patent.

## **4. U.S. International Trade Commission -- Jurisdiction (§ 115.03)**

International Trade Commission proceeding under Tariff Act's Section 337, 19 USC 1337, is not "inherently judicial" proceeding that must be adjudicated only by Constitution's Article III courts, even though private rights may be affected by Section 337 proceedings, since main thrust of Section 337 is to protect public interest from unfair trade practices in international commerce, and since Section 337 represents valid delegation of broad congressional power to achieve such purpose.

## Case History and Disposition:

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Appeal from U.S. International Trade Commission.

U.S. International Trade Commission investigation on behalf of E.I. du Pont de Nemours and Co., for exclusion of certain aramid fibers covered by U.S. patent, in which Akzo N.V., Enka B.V., Aramide Maatschappij v.o.f., and Akzona Incorporated, were designated as respondents. From exclusion order prohibiting importation, respondents appeal. Affirmed.

### Attorneys:

Denis McInerney, and Cahill Gordon & Reindel, both of New York, N.Y., C. Frederick Leydig, and Leydig, Voit & Mayer Ltd., both of Chicago, Ill., and Tom M. Schaumberg, Cecilia H. Gonzalez, and Plaia & Schaumberg, Chartered, all of Washington, D.C. (David R. Hyde, Laurence T. Sorkin, George Wailand, P. Kevin Castel, Charles S. Oslakovic, John Kilyk, Jr., Norval B. Galloway, and Robert H. Falk, and Hubbard, Thurman, Turner & Tucker, both of Dallas, Texas, on the brief), for appellants.

Catherine Field, Office of the General Counsel, U.S. International Trade Commission (Michael P. Mabile, assistant general counsel, on the brief), for appellee.

Daniel M. Gribbon, and Covington & Burling, both of Washington, D.C., Joseph M. Fitzpatrick, and Fitzpatrick, Cella, Harper & Scinto, both of New York, N.Y. (Harris Weinstein,

James R. Atwood, Eugene D. Gulland, Dwight C. Smith, III, and Stephen H. Marcus, and John A. O'Brien, Henry J. Renk, Charles P. Baker, Laura A. Bauer, and Bruce C. Haas, on the brief), for intervenor-appellee E.I. du Pont de Nemours.

**Judge:**

Before Markey, Chief Judge, and Davis and Nies, Circuit Judges.

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**Opinion Text**

**Opinion By:**

Davis, Circuit Judge.

This is an appeal by Akzo, N.V., Enka B.V., Aramide Maatschappij v.o.f. and Akzona Inc. (appellants or Akzo) from an exclusion order by the United States International Trade Commission (Commission or trial tribunal) pursuant to §§337 and 337a of the Tariff Act of 1930, 19 U.S.C. §§1337, 1337a (1982), prohibiting the importation into the United States of aramid fibers manufactured by Akzo in the Netherlands. We affirm.

**I. Background; Issues; Scope of Review**

*A. Background.* On April 18, 1984, E.I. du Pont de Nemours and Company (appellee or Du Pont) filed a complaint with the Commission under §337 of the Tariff Act of 1930 (19 U.S.C. §1337). 1 The complaint alleged that Akzo had engaged in unfair methods of competition and unfair acts including the importation, sale and marketing in the United States of certain aramid fibers. 2 produced in the Netherlands by a process purportedly covered by the claims of Du Pont's U.S. Letters Patent No. 3,767,756 (the Blades or '756 patent). In addition, the complaint charged Akzo with attempting both to exploit applications of aramid fibers and to penetrate markets for

aramid fibers created by Du Pont. Finally, the complaint alleged that the effect or tendency of the unfair methods of competition and unfair acts was to destroy or substantially injure an industry, efficiently and economically operated, in the United States.

After evaluating Du Pont's complaint, the Commission instituted an investigation pursuant to §337(b), 19 U.S.C. §1337(b), and an administrative law judge (ALJ) was assigned to preside over the investigation.

The major substantive question before the ALJ (and now before us) is the validity and enforceability of Du Pont's Blades patent. Those issues, and the related facts and circumstances, are set forth and discussed in Part II, *infra*. The major procedural issue is whether Akzo was denied due process because Du Pont's confidential documents were not disclosed to appellants' management. This problem (together with an alleged violation of treaty rights) is considered in Part III, *infra*. The other issues presented to us are dealt with in Part IV, *infra*.

Following 14 days of hearing the ALJ issued an initial determination holding that there was a violation of §337(a) of the Tariff Act of 1930 in the unlawful importation or sale of certain aramid fibers produced overseas by means of a process that if practiced in the United States would infringe the Blades '756 patent, and that importation has the tendency to injure substantially an efficiently and economically operated industry in the United States.

Akzo filed a petition for review of the ALJ's initial determination on June 3, 1985. On July 15, 1985, the Commission decided to review only those portions of the initial determination pertaining to anticipation and obviousness of the Blades '756 patent under 35 U.S.C. §§102 and 103. Ultimately, the Commission affirmed the ALJ's findings and conclusions on anticipation and obviousness and determined that appellants had failed to prove the Blades '756 patent invalid. Having decided not to review the remainder of the initial determination, the Commission concluded that there was a violation of §337. Accordingly, on November 25, 1985, the Commission, after further consideration, entered an exclusion order limited to certain forms of aramid fibers produced by Akzo. The Commission's order became final on January 25, 1986 when the President declined to overrule it pursuant to §337(g).

B. *Issues*. On this appeal, Akzo raises a number of issues for us to resolve:

(1) whether the Commission's finding that claim 13 of the '756 patent was "not invalid" and "not unenforceable" is supported by substantial evidence; 3

- (2) whether Akzo's due process and treaty rights were violated in the Commission proceeding;
- (3) whether the Commission, as a non-Article III tribunal, is constitutionally prohibited from adjudicating the validity and enforceability of patents;
- (4) whether the Commission's finding that Akzo's sales of aramid fibers in the United States would have a tendency to "destroy or substantially injure" an industry economically and efficiently operated is supported by substantial evidence;
- (5) whether the Commission's conclusion that Du Pont's value-in-use pricing did not violate the antitrust laws is correct and supported by substantial evidence; and
- (6) whether it is a defense to Du Pont's complaint that Du Pont employed a solvent included in a polymerization process patented by Akzo.

C. *Scope of review*. This court defined our scope of review in cases appealed from the Commission in *Beloit Corp. v. Valmet OY*, (Order), 742 F.2d 1421, 223 USPQ 193 (1984), *cert. denied*, 105 S. Ct. 2706, 86 L. Ed. 2d 721 (1985). There we held that the court "does not sit to review what the Commission has not decided." 742 F.2d at 1423, 223 USPQ at 194. *Beloit* is distinguishable from this case because there the Commission specifically adopted only a portion of the presiding official's initial decision. *See, e.g., American Hospital Supply Corp. v. Travenol Laboratories, Inc.*, 745 F.2d 1, 5 n.13, 223 USPQ 577, 580 n.13 (Fed. Cir. 1984). In contrast, in the current case, the Commission merely determined not to review the remainder of the initial decision, choosing to conduct its own §§102 and 103 analysis. The Commission neither rejected any part of the initial determination nor did it say that it was taking no position on any part of it. Although the Commission limited its own review to patent validity under §§102 and 103, the fact that it affirmed the conclusion of the ALJ that there was a §337 violation makes reviewable those conclusions of the ALJ necessary for the Commission to have determined (as it did) that there was a §337 violation. *Accord Warner Brothers, Inc. v. U.S. International Trade Commission*, 787 F.2d 562, 229 USPQ 126 (Fed. Cir. 1986). This includes not only the §§102 and 103 issues of anticipation and obviousness, but also whether there was inequitable conduct before the Patent Office and the other issues decided by the Commission and the ALJ. 4

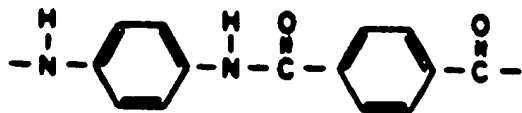
## **II. Validity and Enforceability of the Blades Patent**



A. *The Invention*. 5 The Blades '756 patent, "Dry-Jet Wet Spinning Process," was issued on October 23, 1973 to Dr. Herbert Blades and immediately assigned to Du Pont. The patent describes a method that produces a high strength synthetic polyamide 6 fiber which Du Pont has marketed under the trade name Kevlar. This fiber has an extraordinary as-spun strength, five times stronger pound for pound than steel, as well as a modulus (stretch resistance) equal to glass, eight times as high as industrial grade polyester, and twenty-five times as high as industrial nylon. Kevlar is also much more heat resistant than industrial-grade nylon or polyester. These extraordinary physical properties, as well as Kevlar's light weight and rustproof character, have enabled Du Pont to market it for use in a variety of applications including, but not limited to, roping, spacecraft and airplane parts, bullet resistant clothing and armor, tires, and boat hulls. Depending upon its use, Kevlar has been used as a substitute for steel, aluminum, asbestos, nylon, rayon, polyester, cotton, or cotton fiber. Kevlar is available as either a continuous rope or filament, or alternatively as a staple or pulp. Staple consists of short filaments which can be spun into yarn. Pulp is ground fiber most often used as an asbestos substitute. The procedure by which the synthetic fiber is manufactured involves dry spinning polyamides from coagulation solutions called dopes. In dry spinning, a specialized filter called a spinneret is placed a short distance from a bath of spinning dope that is extruded through a layer of gas and into an aqueous

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coagulation bath. 7 The dope used in the Blades '756 patent consists of para-positioned aromatic polyamides dissolved in highly concentrated sulfuric acid and heated to around 100°C. The polyamide used is a high molecular weight poly(p-phenylene terephthalamide) (PPD-T).



The high molecular weight of the polyamide results in a high inherent viscosity 8 of approximately 4.4% when 20% PPD-T by weight is dissolved in approximately 100% sulfuric acid.

In 1969 Dr. Blades, one of Du Pont's research scientists, began to develop and conduct

experiments aimed at producing a high-strength synthetic fiber. Blades exclusively employed a wet-spinning method in his early work, using PPD-T as well as other polymers. This early work had minimal success. Although the dry-spinning method was known by Du Pont scientists, a 1966 report indicated that the low solubility of PPD-T precluded use of the dry-spinning technique. In 1969, Du Pont's Dr. Peter Boettcher suggested to Blades that dry spinning might improve the end-results by influencing coagulation. Dr. Boettcher had learned about dry spinning from a Monsanto Morgan patent (Morgan '645 patent).

Blades' early experimentation with the dry-spinning process did not yield fiber with an increased tenacity despite the fact that dry spinning was known to improve fiber tenacity using other dopes. Blades' initial conclusion was that dry spinning would be unsuccessful with PPD-T.

Nevertheless, he continued experimenting with the dry-spinning process, and, at his supervisor's suggestion, began using sulfuric acid as a solvent. Blades also redesigned and built a mixing device because of some difficulties he encountered mixing PPD-T with the sulfuric acid.

Sulfuric acid was not an evident candidate as a solvent because it was known to react with the polymer and become degraded at high temperatures. Blades discovered, however, that he could produce an improved fiber using 10.2% polyamide in about 100% sulfuric acid. Under this system he found that there was no difference in tensile strength of the fiber using a wet-spun or dry-spun method. PPD-T was a somewhat unusual choice of polymer for this work because of its characteristic rigidity caused by the placement of para-oriented aromatic rings in the chain.

The para-positioning of the aromatic rings makes the polyamide much less soluble than analogous meta-positioned rings. But the fact is that, while meta-positioned polymers generally form only isotropic solutions, para-positioned polymers of Blades' invention form anisotropic solutions at high concentrations.

In subsequent trials, Blades increased the concentration of PPD-T and obtained a significantly improved fiber, especially using the dry-spinning method. When the system was operated at room temperature, however, he found that undissolved polyamide clogged up the holes of the spinneret. He therefore heated the dope at these higher concentrations to dissolve all the polyamide and keep the system above the melting point. To his surprise, Blades discovered that there was little or no degradation of the polyamide at high temperatures. He explained this unexpected absence of degradation by theorizing that, when the system contains high concentrations of PPD-T, the sulfuric acid binds to the polymer and chemically deactivates it. After numerous trials, Blades found that an optional fiber could be produced using PPD-T of 4.4

inherent viscosity at a 20% concentration in approximately 100% sulfuric acid. The dope was then heated to 95°C and dry spinning was then carried out at about 100°C. The resultant fiber had a tenacity of approximately two times that of previous experimental fibers.

In April 1971, Blades filed an application with the PTO claiming the method of making these aramid fibers. the initial application and two subsequent applications were rejected in large part on the basis of anticipation by the Morgan '645 and the Kwolek '542 patents which Du Pont had brought to the attention of the examiner. Initially the

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examiner also rejected the application under 35 U.S.C. §103. Blades, however, was able to overcome the examiner's objections, and on May 2, 1973, the PTO gave notice of allowance of the Blades '756 patent. Blades assigned the patent rights to Du Pont.

B. *Validity*. Claim 13, the narrowest claim, is the only claim involved on this appeal. 10 Akzo says that that claim is invalid under 35 U.S.C. §§ 102 and 103. More specifically, Akzo argues that the Commission misconstrued the legal standard of anticipation and therefore erroneously held that the Blades '756 patent was not anticipated. In addition, appellants argue that the Commission failed properly to evaluate the prior art in determining obviousness *vel non*. Of course, it goes without elaboration that the Blades '756 patent enjoys a presumption of validity under 35 U.S.C. §282.

[1] As we have said, Akzo challenges the Commission's use of §102, claiming that that tribunal misinterpreted the legal standard of anticipation. Under 35 U.S.C. § 102, anticipation requires that each and every element of the claimed invention be disclosed in a prior art reference. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). In addition, the prior art reference must be enabling, thus placing the allegedly disclosed matter in the possession of the public. *In re Brown*, 329 F.2d 1006, 1011, 141 USPQ 245, 249 (CCPA 1964). Akzo asserts, however, that the Commission wrongly used an "*ipsissimis verbis* test" in reaching its conclusion that the Blades '756 patent was not anticipated by the Morgan '645 disclosure. 11 We do not read the Commission's opinion as requiring such an "*ipsissimis verbis* test." Rather, we understand that opinion as simply finding that the prior art reference did not disclose, to one of ordinary skill in

the art, 12 the process for making the aramid fibers described in claim 13. The Commission noted that while the Morgan '645 patent called for the use of sulfuric acid, it did not call for the use of at least 98% concentrated sulfuric acid which was critical for the success of the Blades process. The Commission also concurred with the ALJ and found that concentrated sulfuric acid is not inherently 98% sulfuric acid to one skilled in the art.

Because we determine that the Commission did not use an incorrect legal standard under §102, we are bound to accept its and the ALJ's factual findings if supported by substantial evidence. 5 U.S.C. §706 (1982). As appellants themselves point out, anticipation under §102 is a factual determination. *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984). We must conclude that there is substantial evidence in the record supporting the Commission's conclusion that claim 13 of the Blades '756 patent was not anticipated by the prior art. As the Supreme Court noted in *Universal Camera v. NLRB*, 350 U.S. 474, 488 (1951), the substantial evidence standard does not allow a court to conduct a *de novo* investigation of the evidence on the record before it and reach an independent conclusion; rather, the court's review is limited to deciding whether there is sufficient evidence in the record considered as a whole to support the agency's findings. The mere fact that a reasonable person might reach some other conclusion is insufficient for this court to overturn the agency's conclusion. See *SSIH Equipment S.A. v. U.S. International Trade Commission*, 718 F.2d 365, 381, 218 USPQ 678, 691 (Fed. Cir. 1983) (additional views of Judge Nies).

The ALJ concluded, after extensive analysis, that the claimed invention of the Blades '756 patent was not anticipated by prior art, including the Morgan '645 patent. He noted that, while the Morgan '645 patent teaches the use of an airgap, the use of airgap in and of itself does not guarantee an improved fiber. This was obvious from Blades' early work. The ALJ also found that sulfuric acid in any concentration was not disclosed as a solvent in the Morgan '645 patent; or did that patent disclose PPD-T in its optically anisotropic state. Moreover, the ALJ found that the Morgan '645 patent was not an enabling disclosure with regard to the claimed spinning dope. Neither the 18% concentration of PPD-T nor the heating of the dope to achieve this concentration was disclosed in the Morgan '645 patent. The ALJ also rejected appellants' arguments that the

Blades process was anticipated by the Hill and Smith patents which were referenced in the

Morgan '645 patent. This would have required Blades randomly to pick and choose among a number of different polyamides, a plurality of solvents, and a range of inherent viscosities. The ALJ rejected such "random picking and choosing" of prior art, relying on *In re Arkley*, 455 F.2d 586, 587, 172 USPQ 524, 526 (CCPA 1972), and concluded in effect that the anticipatory reference must disclose in the prior art a thing substantially identical with the claimed invention. In a somewhat more limited consideration -- restricted to the concentration of sulfuric acid in the Blades patent -- the Commission itself reached the same result.

Accordingly, we hold that there is substantial evidence in the record as a whole to sustain the Commission's (including the ALJ's) findings that the Blades process was not anticipated by any prior art. 13

Appellants say, as an alternative to their §102 argument, that the trial tribunal erred when it failed to find that the Blades '756 patent would have been obvious under 35 U.S.C. §103 in view of the Morgan '645 and Kwolek '542 patents. It is now established that obviousness is a question of law based on factual inquiries which include:

- (1) the scope and content of the prior art;
- (2) the difference between prior art and the claims at stake;
- (3) the level of ordinary skill in the art; and
- (4) objective evidence of nonobviousness (secondary factors).

Such objective indications as commercial success and long-felt but unresolved needs, failure of others, copying, and unexpected results are relevant facts relating to the issue of validity. *See, e.g., In re DeBlauwe*, 736 F.2d 699, 222 USPQ 191 (Fed. Cir. 1984) (obviousness a question of law to be determined on the facts). Since obviousness is a question of law, we are not bound by the Commission's ultimate determination on the matter of §103 obviousness. *See Corning Glass Works v. U.S. International Trade Commission*, 799 F.2d 1559, 1565 & n.5, 230 USPQ 822, 826 & n.5 (Fed. Cir. 1986).

In the proceedings before the Commission, Du Pont premised its defense of nonobviousness on the basis that the prior art -- mainly that the Morgan '645 patent and the Kwolek '542 patent -- actually led away rather than toward the Blades process. The Commission found Du Pont's expert witness' testimony to be compelling. That witness, Dr. Uhlmann, explained why the Morgan '645 patent, when considered with other prior art references, including the Kwolek '542, Bair '941, and Cipriani '793 patents, would not have rendered the invention of Blades '756 patent obvious. The Kwolek '542 patent calls for conventional wet or dry spinning and calls for

concentrations of PPD-T far lower than required by the Blades process. The Bair '941 patent does not disclose heating sulfuric acid with PPD-T to achieve an anisotropic solution. While the Morgan '745 patent discloses air-gap spinning, its emphasis is on meta-oriented polymers. Based on these differences, Dr. Uhlmann concluded that one skilled in the art would *not* combine them or be led to the Blades invention.

As the ALJ recognized, prior art references before the tribunal must be read as a whole and consideration must be given where the references diverge and teach away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock*, 721 F.2d 1540, 1550, 220 USPQ 303, 311 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Moreover, appellants cannot pick and choose among individual parts of assorted prior art references "as a mosaic to recreate a facsimile of the claimed invention." 721 F.2d at 1552, 220 USPQ at 312. In this case, the ALJ found that Akzo's expert witnesses could not show how the prior art patents could be brought together to render the Blades '756 invention obvious without reconstructing the teachings of those patents assisted by hindsight.

The secondary considerations also compelled the Commission to make a finding of nonobviousness. The commercial success of Du Pont's Kevlar patent has been enormous and its range of uses substantial. Du Pont is still developing commercial applications for Kevlar, having spent significant amounts of money in developing both new uses and new markets for the product. Commercial success is, of course, a strong factor favoring non-obviousness. *Simmons Fastener Corp. v. Illinois Tool Works, Inc.*, 739 F.2d 1573, 1575-76, 222 USPQ 774, 777, (Fed. Cir. 1984), *cert. denied*, 471 U.S. 1065 (1985). Moreover, as the ALJ noted, Blades solved a problem that Du Pont research scientists had

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been tackling for years. The Blades process represents a solution to a long-felt need and practitioners in the field immediately recognized that that process was a remarkable advancement in polymer spinning technology. Indeed, as brought out in this appeal, even one of Akzo's scientific reports repeatedly expressed concern for degradation of PPD-T and amazement at the disclosure of the Blades '756 process.

We agree, therefore, with the Commission's determination that the Blades '756 patent is not invalid for anticipation or obviousness.

C. *Alleged inequitable conduct before the Patent and Trademark Office (PTO)*. Appellants urge that Du Pont misled the patent examiner in two respects: first, that Du Pont submitted an affidavit to overcome the examiner's obviousness objections that failed to compare the Blades process with the closest prior art; and, second, that Du Pont persistently argued that the Morgan '645 patent and the Kwolek '542 patent did not anticipate the Blades patent.

In *J.P. Stevens & Co. v. Lex Tex Ltd.*, 747 F.2d 1553, 223 USPQ 1089 (Fed. Cir. 1984), *cert. denied*, 106 S. Ct. 73 (1985), this court articulated a two-prong test for establishing inequitable conduct before the PTO. To render a patent unenforceable, the proponent of the inequitable conduct must first establish by clear and convincing evidence that there was a material misrepresentation or omission of information, and then establish a threshold level of intent on the part of the applicant. *See also Atlas Powder Co. v. E.I. du Pont de Nemours & Co.*, 750 F.2d 1569, 1577-78, 224 USPQ 409, 414-15 (Fed. Cir. 1984).

Our major standard for materiality is whether a reasonable examiner would consider the omission or misrepresentation important in deciding whether to issue the patent. 14 Materiality and intent must also be considered together: the more material the omission or misrepresentation, the less intent that must be shown to reach a conclusion of inequitable conduct. *American Hoist & Derrick Co. v. Sowa & Sons*, 725 F.2d 1350, 1363, 220 USPQ 763, 773 (Fed. Cir.), *cert. denied*, 469 U.S. 821, 224 USPQ 520 (1984).

We uphold the Commission's findings and conclusion that Du Pont's affidavit or arguments before the examiner did not constitute material misrepresentation. As Akzo concedes, the examiner had both the Morgan '645 patent and the Kwolek '542 patents before him throughout the examination process. It was on the basis of these two patents that Du Pont's first three applications were rejected. The mere fact that Du Pont attempted to distinguish the Blades process from the prior art does not constitute a material omission or misrepresentation. The examiner was free to reach his own conclusion regarding the Blades process based on the art in front of him. Nor does Du Pont's affidavit, advocating a particular interpretation of the Morgan '645 and Kwolek '542 patents (albeit favorable to Du Pont's position), show any intent to mislead the PTO. Du Pont's intent was not to mislead, but rather to distinguish prior art from the Blades process and demonstrate to the examiner that the Blades process and demonstrate to the examiner that the Blades process would not have been obvious in light of Morgan '645 and Kwolek '542. The sum of it is that, because we cannot see either a proved material misrepresentation or a proved intent to mislead, we must conclude that Akzo has not met its burden of proving

inequitable conduct before the PTO

### **III. Due Process and Treaty Rights**

A. *Due Process* . This aspect of the appeal concerns the Commission's procedures with respect to the private parties' confidential information. On May 21, 1984, the ALJ issued an administrative protective order pertaining to confidential business information, as defined in the Commission's Rules, 19 C.F.R. §210.30(d)(7) (1976), that would be produced during the discovery phase of the investigation.

In general, this order permitted access to all such confidential information by Akzo's and Du Pont's outside counsel but not by management personnel or in-house counsel of either private company. At a preliminary conference held June 22, 1984, Akzo made the first of three unsuccessful attempts to modify the protective order. Arguing that there was a substantial overlap between the Commission's investigation and an action brought by Akzo against Du Pont them (and still) pending in the United States District Court for the District of Delaware, Akzo moved to align the protective orders by modifying the ALJ's protective order so that its terms coincided with those of a protective order earlier issued by the District Court in the Delaware action. The ALJ denied Akzo's motion on July 6, 1984.

By letter dated June 27, 1984, Akzo requested that the protective order be amended

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to include three designated members of Akzo's in-house counsel. On July 6, 1984, the ALJ concluded that Akzo failed to demonstrate the requisite need to warrant granting Akzo's in-house counsel access to Du Pont's confidential business information. Akzo renewed its motion to modify the protective order on February 8, 1985, this time urging that both Akzo's in-house counsel and the general manager of Akzo's Industrial Fiber Group should be granted limited access to Du Pont's confidential business information. Because Akzo failed (in the ALJ's view) to demonstrate a need for either its in-house counsel or its general manager to have access to the requested confidential material, the ALJ denied Akzo's motion on February 21, 1985.

Akzo now contends that the protective order, issued by the ALJ on May 21, 1984, effectively deprived it of its rights to confrontation, to rebuttal, and to effective assistance of counsel. According to Akzo, under the terms of the protective order, the parties' designation of materials



as confidential had the effect of "unilaterally immunizing them from scrutiny by the opposing party." Moreover, Akzo maintains that the system established by the protective order completely denied Akzo "access to all of the critical evidence on which the decision against it was based."

[2] Our examination of the challenged protective order, as it was enforced, shows Akzo's charges to be groundless. The protective order provides, *inter alia*, that confidential business information "shall be disclosed at any hearing only *in camera* before the commission or the administrative law judge." Although the protective order enabled either party to designate business information as confidential, such a designation did not "unilaterally immunize" purportedly confidential documents from scrutiny by the opposing party. In the first place, all the protected information was freely available to outside counsel who could fully consider it, although they were not free to show or repeat it to Akzo's management or in-house counsel. Second, paragraph 10 of the protective order provided a mechanism by which either party was free to object to its adversary's designations at any stage of the proceeding. According to paragraph 10, if either party disagreed with respect to the designation of business material as confidential, that party "shall confer [with the supplier] as to the status of the subject information proffered within the context of this order." In the event that the parties failed within 10 days to reach agreement as to the proper status of the information, the protective order provided that either party could submit the issue to the ALJ or the Commission for resolution. The mechanism of paragraph 10 could also be used to permit disclosure to particular persons of otherwise classified material. Although, as mentioned earlier, Akzo attempted to modify the protective order on three separate occasions, Akzo never invoked the dispute resolution procedures of paragraph 10 to challenge Du Pont's characterization of business information as confidential or as not disclosable to particular individuals. Third, the protective order expressly permitted other exceptions to be made by the ALJ or the Commission.

In denying Akzo's various motions to amend the protective order, the ALJ relied on the Commission's decision in *Certain Rotary Wheel Printers*, Inv. No. 337-TA-145, 5 ITRD 1933 (Nov. 4, 1983). According to *Rotary Wheel Printers*:

rotection of confidential information is crucial to the Commission's ability to carry out its statutory responsibilities. In addition, review after discovery and the evidentiary hearing are completed would provide an inadequate remedy. The inappropriate release of confidential information can never be fully remedied.

The Commission has traditionally been reluctant to release confidential information where not

absolutely necessary.

5 ITRD at 1935.

Thus, implicit in Akzo's due process attack on the protective order is the position that, in the interests of fundamental fairness, it was "absolutely necessary" for Akzo's in-house counsel and general manager to have access to Du Pont's confidential business information. However, "[i]n section 337 investigations, it is the exception rather than the rule to release confidential information to in-house counsel." *Id*.

The primary justification for the Commission's reluctance to grant adversary management and in-house counsel access to confidential business information is that, in order to discharge its statutory responsibilities within the strict statutory time limits, the Commission is heavily dependent on the voluntary submission of information. Disclosure of sensitive materials to an adversary would undoubtedly have a chilling effect on the parties' willingness to provide the confidential information essential to the Commission's fact-finding processes. the Commission has resolved the difficult and controversial question of the role of in-house counsel by taking a conservative position on the side of optimum shielding of business

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information. Obviously, where confidential material is disclosed to an employee of a competitor, the risk of the competitor's obtaining an unfair business advantage may be substantially increased. This general Commission position is neither unreasonable nor arbitrary. It represents an appropriate balancing between the needs demanded by the Commission's process and the parties' need for participation by its in-house personnel.

This is especially true because there is no *per se* rule against disclosure to either a competitor's in-house counsel or management representative. *Rotary Wheel Printers* established, and the ALJ employed, a three-part balancing test to determine whether, to whom, and under what conditions to release confidential information. Factors to be considered include the party's need for the confidential information sought in order to adequately prepare its case, the harm that disclosure would cause the party submitting the information, and the forum's interest in maintaining the confidentiality of the information sought. 5 ITRD at 1937.

After reviewing the record, the ALJ concluded that Akzo failed to demonstrate clearly a need for granting access to confidential business information to either Akzo's in-house counsel or key

management officials. The ALJ also found that disclosure would cause substantial harm to Du Pont's competitive position. These particular rulings cannot be faulted. The court understands that all information relating to patent validity and enforceability ( *see* Part II, *supra* ) was promptly made fully available to all. As for the information bearing on the important question of whether Akzo's importation of aramid fibers would tend to destroy or substantially injure Du Pont's business ( *see* Part IV, *infra* ), it is obvious that that confidential information -- relating to Du Pont's business, activities, plans and expectations -- should not be made available (unless, perhaps, where absolutely necessary for a fair hearing) to a direct competitor like Akzo. That such full access was not absolutely necessary to appellants' making of their own case is shown by the crucial fact that Akzo was at all times perfectly free to offer its own market projections as well as to reveal its own activities, forecasts, and interpretations. Both sides could present to the Commission their own information on those matters without knowing those of the other side's. Akzo argues, however, that the denial of its motions to modify the protective order effectively denied its due process right to participate in its own defense. The contention is that Akzo was subjected to serious adverse governmental action on the basis of evidence which Akzo was never permitted to know and "personally" refute. In support of this position, Akzo invokes §555(b) of the Administrative Procedure Act which was made applicable to §337 proceedings by the 1974 Amendments to the Tariff Act of 1930. Under §555(b), "[a] party is entitled to appear in person or by or with counsel or other duly qualified representative in an agency proceeding." 5 U.S.C. §555(b). However, Akzo was represented by competent and experienced outside counsel throughout the proceedings; these counsel were aware of all confidential information. Further, Akzo fails to recognize that "the affirmative grant of the right to appear apparently bestowed by Section 555(b) is not blindly absolute, without regard to the status or nature of the proceedings and concern for the orderly conduct of public business." *DeVyver v. Warden, U.S. Penitentiary*, 388 F.Supp. 1213, 1222 (M.D. Pa. 1974) citing *Easton Utilities Commission v. Atomic Energy Commission*, 424 F.2d 847, 852 (D.C. Cir. 1970). Whatever else §555(b) guarantees to parties to an administrative proceeding under §337, it does not mandate disclosure of significant confidential information to in-house counsel and corporate executives of a business competitor -- where that information is fully available to outside counsel. Akzo's contention withers in the face of unrefuted evidence that more than 90 people representing Akzo, including numerous expert witnesses and members of the battery of four law firms comprising Akzo's defense team, had unrestricted access to Du Pont's confidential information.

Akzo has also failed to demonstrate that it suffered actual harm under the confidentiality procedures instituted by the ALJ. Although Akzo's insiders were denied access to Du Pont's economic and market forecasts with respect to the production and sale of aramid fibers, Akzo was not prevented (as we have pointed out) from offering its own projections into evidence under the cover of confidentiality. It is difficult to see how Akzo was prejudiced. Finally, we have neither found nor been directed to any judicial decision in this country mandating, in the circumstances present here, that business confidential information *must* be made to inside management. On the contrary, we are aware, from the practice of our own court, that records in appeals to us are frequently classified in large part, and are presumably not available to the management of the opposing party. Moreover, there are a substantial number of decisions upholding

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confidentiality comparable to that accepted by the Commission. Akzo tells us that most of these involved only pretrial discovery (and not evidence at a hearing or trial) and that the others are also distinguishable. We do not stop to examine these arguments because, at the least, these decisions (a) show that there is no holding to the contrary of the one we now make and (b) strongly suggest the validity of carefully tailored protective orders allowing exceptions to be made if adequate proof is made. 15

B. *Treaty rights*. As an alternate ground for reversal, Akzo argues that, because the proceedings below discriminated against Akzo on the basis of its Dutch nationality, they violate United States treaty obligations. We disagree with Akzo's premise that there was discrimination here. Essentially, Akzo employs a *non sequitur* to support its position. The core of Akzo's claim is that it was denied the rights that would have been afforded a domestic firm sued for patent infringement in a district court. According to Akzo, this "inferior treatment" by the Commission constitutes discrimination on the basis of nationality. That analysis misses the mark. The appropriate inquiry is whether Akzo was afforded the same rights afforded to domestic firms in a §337 proceeding before the Commission. Clearly, Akzo has failed to demonstrate that it suffered from discriminatory treatment. First, under the express terms of the protective order, both Akzo and Du Pont were bound by identical procedures regarding confidentiality and discovery. Neither party was allowed access to the other party's confidential business

information. Second, the same argument was rejected in *Certain Spring Assemblies and Components Thereof*, Inv. No. 337-TA-88, 216 USPQ 225, *aff'd sub nom. General Motors Corp. v. U.S. International Trade Commission*, 687 F.2d 476, 215 USPQ 484 (CCPA 1982), *cert. denied*, 459 U.S. 1105 (1983). In that case, respondent unsuccessfully raised certain U.S.-Canadian treaties as a defense to enforcement of §337. The Commission observed: Section 337 does not discriminate against foreign corporations by virtue of their foreign status. It applies to foreign and domestic corporations alike. Section 337 gives the Commission jurisdiction over products imported from a foreign country, *even if they are manufactured and/or imported by a U.S. corporation*. The Commission's jurisdiction lies in unfair acts occurring in connection with the importation of goods into the United States or their sale, and it extends to all persons engaged in such unfair acts. 216 USPQ at 231 (emphasis added).

#### IV. Other Issues

In this part we consider four separate issues raised by appellants: (1) whether the Commission properly found that continued importation of Akzo's product would substantially injure or tend to injure Du Pont; (2) whether adjudication of §337 actions by a non-Article III tribunal is unlawful; (3) whether Du Pont's pricing practices (with respect to its aramid products) violate the antitrust laws; and (4) whether Du Pont committed inequitable conduct by infringing Akzo's own patent.

A. *Tendency to destroy or substantially injure*. The ALJ concluded (and we have upheld) that Akzo violated §337(a) by the unlawful importation or sale of certain aramid fibers produced in the Netherlands by means of a process which if practiced in the United States would infringe the Blades '756 patent. Such acts, long considered to be violative of §337, clearly constitute unfair acts for the purposes of the statute. *See, e.g., In re Chain Door Locks*, USITC Pub. No. 770 (Apr. 1976), 191 USPQ 272 (USITC 1976); *In re Von Clemm*, 229 F.2d 441, 108 USPQ 371 (CCPA 1955); *In re Amtorg Trading Corp.*, 75 F.2d 826, 24 USPQ 315 (CCPA), *cert. denied*, 296 U.S. 576 (1935).

However, unfair acts, without more, are legally insufficient to support a finding of a §337 violation. That provision declares unlawful "[u]nfair methods of competition and unfair acts in the importation of articles . . . , the effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States." Thus, to prove a violation of §337, the complainant must show both an unfair act and a resulting detrimental

effect or tendency. *New England Butt Co. v. U.S. International Trade Commission*, 756 F.2d 874, 876, 225 USPQ 260, 261 (Fed. Cir. 1985). As this court recently held in *Textron, Inc. v. U.S. International Trade Commission*, 753 F.2d 1019, 224 USPQ 625 (Fed. Cir. 1985), "section 337 has consistently

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been interpreted to contain a distinct injury requirement of independent proof." 753 F.2d at 1028, 224 USPQ at 631 (citations omitted); *accord*, *Corning Glass Works v. U.S. International Trade Commission*, 799 F.2d 1559, 230 USPQ 822 (Fed. Cir. 1986); *Warner Brothers, Inc. v. U.S. International Trade Commission*, 787 F.2d 562, 564, 229 USPQ 126, 127 (Fed. Cir. 1986). According to *Textron*, "Congress may well have included this separate requirement . . . to insure that the extreme and internationally provocative remedy contemplated [by §337] -- exclusion of imports from particular countries -- would be implemented only when this is compelled by strong economic reasons." 753 F.2d at 1028-29, 224 USPQ at 631 (citations omitted). It follows that the mere concurrence of an unfair act and some resulting injury is not necessarily sufficient, in itself, to establish a violation of §337. "Congress has directed that the remedy of section 337, involving as it does the act of the sovereign in closing our borders to certain imports, be exercised only in those instances where at least there is proof of a tendency to substantially injure the subject industry." *Corning Glass Works v. U.S. International Trade Commission*, 799 F.2d 1559, 1567, 230 USPQ 822, 827 (Fed. Cir. 1986) (emphasis in original). Not only is an injury determination intimately wed to the particular facts of each case, but also the determination of injury is precisely the type of question which Congress has committed to the expertise of the Commission. Thus, on appeal, our review of an injury determination is limited to deciding whether the Commission's decision is supported by substantial evidence. 19 U.S.C. §1337(c) (1982); 5 U.S.C. §706 (1982); *SSIH Equipment S.A. v. U.S. International Trade Commission*, 718 F.2d 365, 371, 218 USPQ 678, 684 (Fed. Cir. 1983); *General Motors Corp. v. U.S. International Trade Commission*, 687 F.2d 476, 215 USPQ 484 (CCPA 1982), *cert. denied*, 459 U.S. 1105 (1983). In other words, we must decide "whether substantial evidence supports the facts relied on and whether the Commissioner's [sic] determination, on the record, is arbitrary, capricious, or an abuse of discretion." *Corning Glass Works*, 799 F.2d at 1568, 230 USPQ at 828. As we noted in *Corning Glass Works*, "the question of quantum of injury is not

one on which it would be appropriate for this court to put forth a legal standard." *Id.* Nor are we allowed to substitute our own judgment for that of the Commission. *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 416 (1971). Of course, a decision is supported by substantial evidence if it is supported by "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Consolidated Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938).

Our review of the record in this case compels the conclusion that the Commission's determination -- that Akzo's unfair imports of aramid fibers will have a tendency to injure Du Pont substantially -- is supported by substantial evidence. The Commission based its injury determination on a prediction of the future effect of Akzo's unfair imports on the domestic industry. There is substantial support for this determination. The record reflects Akzo's intent and capacity to enter the United States aramid fibers market, Du Pont's resulting loss of revenue, and a probable price reduction by Du Pont in response to Akzo's entry into the United States market. Nonetheless, Akzo urges this court to overturn the Commission's exclusion order and deny relief to Du Pont. Akzo first contends that its projected share of the U.S. market during the remaining life of the '756 patent is *de minimis*. It would be both unwise and improper for this court to establish some arbitrary market-share benchmark as a prerequisite to a finding of a §337 violation and we decline to do so. It is sufficient that the record supports the Commission's conclusion that, upon entry into the U.S. market, Akzo will capture a significant share of the domestic market, if not in relative percentage figures than certainly in absolute dollar figures. [3] Second, Akzo maintains that, notwithstanding its entry into the market, Du Pont's aramid fibers sales volume, revenues and profits will all increase during the remaining life of the patent. But Akzo mischaracterizes the proper standard for measuring injury. The issue is not whether Du Pont's sales, revenues and profits will increase beyond their 1985 levels but rather whether Akzo's presence in the market will substantially injure Du Pont's business during the 1986 - 1990 period (the remaining life of the Blades '756 patent).

As Du Pont correctly points out, nothing in §337 requires a showing that the domestic industry will be utterly deprived of profitability. "Where the unfair practice is the importation of products that infringe a domestic industry's . . . patent right, even a relatively small loss of sales may establish, under section 337(a), the requisite injury . . ." *Bally/Midway Mfg. Co. v. U.S. International Trade Commission*, 714 F.2d 1117, 1124, 219 USPQ 97, 102 (Fed. Cir. 1983). This proposition is entirely consistent with the legislative history of §337. In a House

Report discussing the application of §337 to unfair competition involving patent infringement, Congress stated: "Where unfair methods and acts have resulted in *conceivable losses of sales* , a tendency to substantially injure such industry has been established." *See* House Comm. on Ways and Means, Trade Reform Act of 1973, H.R. Rep. No. 571, 93d Cong. 1st Sess.78 (1973) (emphasis added); *accord In re Von Clemm* , 229 F.2d 441, 445, 108 USPQ 371, 374 (CCPA 1955).

Because substantial evidence supports the facts relied upon by the Commission in making its determination that Akzo's unfair imports would tend to injure Du Pont substantially, we must affirm its injury determination. Akzo has failed to demonstrate that the commission's determination is arbitrary, capricious, or an abuse of discretion.

A contrary result would emasculate the protections of §337 with respect to high technology ventures. Typically, in high technology industries, acute competition forces competitors to commit substantial resources to research and development in hopes of generating profits before either their patents expire or before technological advance makes the products obsolete. Thus, innovators frequently resign themselves to losses during the early life of their patents with the expectation that, if product development and marketing efforts are successful, profits earned during the later life of other patents will provide sufficient compensation for their endeavors. On this record, Du Pont's aramid fibers industry can be said to furnish a classic illustration. Although Du Pont has undertaken extensive product development and marketing efforts since 1973, the company had not earned any return on its investment through 1984. Du Pont anticipates that it will realize its first positive net operating earnings from its aramid fibers production in 1985.

In reaching its injury determination, the Commission permissibly recognized that the aramid fibers industry is in transition from a period requiring extremely high investment of resources to a period when the industry will finally realize a return on that investment. In these circumstances, diminished profits, lower return on investment, and reduced sales are all indicative of substantial injury.

[4] *B. Adjudication of §337 actions by a non-Article III tribunal* . Apparently employing the "kitchen sink" or "let's try anything" approach to appellate advocacy, Akzo raises an additional



challenge to the Commission's proceedings. Relying primarily on *Northern Pipeline Construction Co. v. Marathon Pipe Line Co.*, 458 U.S. 50 (1982), Akzo characterizes the current §337 proceedings as "inherently judicial" involving "essentially private rights" and concludes that the Constitution requires adjudication of §337 issues by Article III courts. Both Akzo's premise and conclusion are flawed. Although it is true that private rights may be affected by §337 determinations, the thrust of the statute is directed toward the protection of the public interest from unfair trade practices in international commerce. As this court recognized in *Young Engineers, Inc. v. U.S. International Trade Commission*, 721 F.2d 1305, 1315, 219 USPQ 1142, 1152 (Fed. Cir. 1983), a §337 proceeding "is not purely private litigation 'between the parties' but rather is an 'investigation' by the Government into unfair methods of competition or unfair acts in the importation of articles into the United States." Moreover, "[t]he power to regulate commerce with foreign nations is expressly conferred upon Congress, and being an enumerated power is complete in itself, acknowledging no limitations other than those prescribed in the Constitution." *Buttfield v. Stranahan*, 192 U.S. 470, 492 (1904). Properly viewed, §337 and its predecessor provisions represent a valid delegation of this broad Congressional power for the public purpose of providing an adequate remedy for domestic industries against unfair practices beginning abroad and culminating in importation. *Sealed Air Corp. v. U.S. International Trade Commission*, 645 F.2d 976, 985-86, 209 USPQ 469, 478 (CCPA 1981).

*C. Du Pont's pricing practices*. Under Du Pont's value-in-use pricing program, the price at which Du Pont sells aramid fibers varies in accordance with the particular end-use to which the purchaser puts the product. Although Du Pont's customers may use the aramid fibers for whatever purpose they desire, they are required to pay Du Pont the price appropriate to the ultimate end-use. To that objective, Du Pont requires its customers to agree that they will use the aramid fibers for the specific end-use for which they are purchased or, if the aramid fibers are put to a different end-use or are resold, that they will pay Du Pont an amount representing the difference between the initial purchase price and the price for the ultimate end-use. According to Akzo, each such agreement constitutes a "contract . . . in restraint of trade," and the entire pattern of agreements, policing and surveillance constitutes a "combination . . . in restraint of trade" within the

meaning of §1 of the Sherman Act. Although the Commission specifically found that "the adoption of Du Pont's value-in-use pricing strategy reflects price competition with other substitute products for various end uses," Akzo continues to argue that Du Pont's value-in-use pricing for aramid fibers violates the antitrust laws.

Plainly, value-in-use pricing is not *per se* an anticompetitive restraint on trade within the meaning of the antitrust laws. In *Carter-Wallace, Inc. v. United States*, 449 F.2d 1374, 171 USPQ 359 (Ct. Cl. 1971), one of this court's predecessor courts sustained against an antitrust challenge a pricing system in which purchasers paid a lower price for the drug meprobamate when used in certain combination drugs. The court noted that "the vendee firms, if one looks at their business as a whole, are not prohibited or deterred from making any use they wish of the meprobamate." *Id.* at 1379, 171 USPQ at 362. Moreover, "[i]t is even reasonable to assume, nothing else appearing, that if the vendees change their minds after purchasing the drug at the lower price they can make unrestricted use of it by paying the difference between that lower price and the consent-decree price." *Id.* at 1379 n.4, 171 USPQ at 362 n.4.

Similarly, under Du Pont's value-in-use pricing system, its customers may use their aramid fibers for whatever purpose they desire, including resale, providing they pay Du Pont the price appropriate to the ultimate end-use. Contrary to Akzo's position that Du Pont's pricing system is anticompetitive and an unreasonable restriction on use and resale, the Commission found and the record establishes that Du Pont's value-in-use pricing has the procompetitive effect of increasing the volume of aramid fibers that are sold.

Akzo also claims that the ALJ erred in not making specific findings on market definition. But, as this court recently observed, the trier of fact need not engage in the meaningless exercise of market definition where no wrongful conduct has been shown. *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 875, 228 USPQ 90, 100 (Fed. Cir. 1985). Equally groundless is Akzo's contention that the ALJ erred by not shifting to Du Pont the burden of demonstrating that its pricing policies had procompetitive effects. The Supreme Court, in *National Collegiate Athletic Ass'n v. Board of Regents*, 468 U.S. 895 (1984), made abundantly clear that the burden of proof shifts only where the evidence shows that the challenged practice has the "hallmarks of anticompetitive behavior," namely, that "it has operated to raise prices and reduce output." *Id.* at 113.

Conversely, in this case, the evidence establishes and the Commission found that the alleged "restraint," value-in-use pricing, results in reduced prices and increased output.

D. *Du Pont's alleged inequitable conduct in manufacture*. During the proceedings below, Akzo

asserted that Du Pont infringed Akzo's U.S. patent 4,308,374 ('374) patent) on a polymerization solvent system used in the formulation of the polymer which is spun into aramid fibers by means of the Blades '756 process. Notwithstanding §337(c) of the Tariff Act of 1930 which provides that "[a]ll legal and equitable defenses may be presented," the ALJ struck Akzo's equitable defense and refused to hear the underlying evidence. On appeal, Akzo contends that the ALJ thus denied Akzo the opportunity to establish a meritorious defense to Du Pont's §337 claim. For two reasons we disagree that this defense was meritorious.

Our conclusion is first supported by the recent decision of the District Court for the Eastern District of Virginia holding the '374 patent invalid for obviousness under 35 U.S.C. §103. *Akzo N.V. v. E.I. DuPont de Nemours & Co.*, Civil Action No. 85-0459-R (E.D. Va. April 24, 1986), on appeal to this court, No. 86-1327/1358. 16 Under that decision, Akzo's infringement claim has been adversely decided and Du Pont has a legal right to do the act claimed to be infringing. Consequently, there is as yet no legitimate basis for Akzo's equitable defense. *See Young Engineers, Inc. v. U.S. International Trade Commission*, 721 F.2d 1305, 1315-16, 219 USPQ 1142, 1152 (Fed. Cir. 1983). Second, this same result is compelled in this instance by this court's decision in *SSIH Equipment S.A. v. U.S. International Trade Commission*, 718 F.2d 365, 218 USPQ 678 (Fed. Cir. 1983). In *SSIH*, we held that allegedly "inequitable conduct" is not a defense to a §337 action where the conduct occurred after issuance of the complainant's patent and involved a different patent. *Id.* at 378-79, 218 USPQ at 689-90. In this case, Du Pont's '756 patent was issued in 1973 and pertains to a spinning process; Akzo's '374 patent was issued in 1981 and pertains to a polymerization process.

### **Conclusion**

For these reasons, we affirm the Commission's exclusion order prohibiting the importation

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into the United States of aramid fibers manufactured by Akzo in the Netherlands.

**AFFIRMED.**

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Footnotes

Footnote 1. U.S.C. §1337 (1976) provides in pertinent part:

Unfair practices in import trade

(a) Unfair methods of competition declared unlawful

Unfair methods of competition and unfair acts in the importation of articles into the United States, or in their sale by the owner, importer, consignee, or agent of either, the effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States, or to prevent the establishment of such an industry, or to restrain or monopolize trade and commerce in the United States, are declared unlawful, and when found by the Commission to exist shall be dealt with, in addition to any other provisions of law, as provided in this section.

Footnote 2. As indicated in Part II, *infra*, aramid fibers are the strongest commercial synthetic fibers known to man -- about five times stronger than steel on an equal weight basis.

Footnote 3. Akzo presents no contention that, if claim 13 of the '756 patent is valid and enforceable, Akzo would not infringe if it used its same process in this country.

Footnote 4. C.F.R. §210.53(h)(1986) provides that "[a]n initial determination . . . shall become the determination of the Commission . . . unless the Commission . . . shall have ordered review of the initial determination or certain issues therein . . . ." In accepting the necessary conclusions of the ALJ we do not hold that the Commission must have concurred with each and every individual factual finding of the ALJ to support its conclusion.

Footnote 5. Our recitation of the facts follows the ALJ's and the Commission's findings which are supported by at least substantial evidence. *See Surface Technology, Inc. v. U.S. International Trade Commission*, 801 F.2d 1336, 1340, 231 USPQ 192, 195 (Fed. Cir. 1986).

Footnote 6. Polyamides are polymers containing amide linkages. Aromatic polymers are polyamides where the radicals linking the amide linkages constitute aromatic radicals. The polymer described in claim 13 of the Blades '756 patent is a wholly aromatic para-positioned polyamide.

Footnote 7. Dry spinning can be contrasted with wet spinning where the spinneret is placed

directly into the spinning dope. Wet spinning is the process used to make a number of synthetic fibers including rayon and nylon.

Footnote 8. Inherent viscosity

( $\eta_{inh}$ ) is a measure of viscosity used in polymer chemistry.

$$\eta_{inh} = \ln \eta_r / c \quad \text{where } \eta_r = \eta / \eta_0 = \frac{\text{solution viscosity}}{\text{solvent viscosity}}$$

measured at the same temperature.

Footnote 9. An anisotropic solution exhibits optical birefringence (i.e., the liquid crystalline solution refracts light in two directions). This characteristic imparts a high degree of orientation to the spun fibers yielding a stiffer and stronger end product without requiring post-coagulation drawing as is required in other man-made fibers such as nylon and rayon.

Footnote 10. Claim 13 reads as follows:

A method comprising extruding a spinning dope from an orifice through a layer of gas and into an aqueous bath at a temperature of under 50°C said dope comprising a polyamide and a solvent of sulfuric acid of at least 98% concentration at a concentration of at least 40 grams of said polyamide per 100 ml. of solvent, said polyamide having an inherent viscosity of at least 3.0 and being poly(p-phenylene terephthalamide).

Footnote 11. An " *ipsissimis verbis* " test requires the same terminology in the prior art in order to find anticipation.

Footnote 12. The Commission made specific findings on the skill of the art. It concluded that the skill in the art was high -- that of a doctorate or post-doctorate in chemistry.

Footnote 13. Appellants cite this court's opinion in *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 782, 227 USPQ 773, 778-79 (Fed. Cir. 1985), as supporting their contention that the Blades '756 patent was anticipated by the prior art. *Titanium Metals* is easily distinguishable from this case. There, a single reference disclosed a range of alloys including that claimed by appellant. In this case, the Commission found that neither the Morgan '645 patent nor any other prior art reference disclosed the Blades '756 process.

Footnote 14. This standard is identical to the PTO standard of materiality. 37 C.F.R. §1.56(a).

Footnote 15. This case differs from *Viscofan S.A. v. U.S. International Trade Commission*, 787 F.2d 544, 552, 229 USPQ 118, 124 (Fed. Cir. 1986), because here (but not in *Viscofan*) the

confidentiality problem was directly related to the propriety of the exclusion order. Accordingly, we have reviewed the merits of the confidentiality actions. *See American Telephone and Telegraph Co. v. U.S. International Trade Commission*, 626 F.2d 841, 842, 206 USPQ 111, 112 (CCPA 1980).

Footnote 16. That appeal was argued on November 7, 1986 before the same panel of judges as heard the current appeal.

- End of Case -